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PATTERNS OF ADULT INFORMATION SEEKING.
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INSTRUMENTAL INFORMATION-SEEKING BEHAVIOR AMONG ADULTS WAS STUDIED TO DETERMINE "WHAT KINDS OF PEOPLE SEEK WHAT KINDS OF INFORMATION THROUGH WHAT CHANNELS." INTERVIEWS WERE CONDUCTED WITH 1,869 ADULTS WHO WERE ASKED ABOUT (1) THEIR USE OF ADULT EDUCATION, MASS MEDIA, AND INTERPERSONAL INFORMATION SOURCES, AND (2) THEIR METHODS OF OBTAINING INFORMATION IN SPECIFIC TOPIC AREAS - BUSINESS-FINANCIAL, HEALTH, WELFARE, EDUCATION, RELIGION, NATIONAL AND INTERNATIONAL AFFAIRS, LOCAL PUBLIC AFFAIRS, OCCUPATIONS, HOMEMAKING, AND LEISURE ACTIVITIES. RESPONSES WERE TABULATED BY AGE, SEX, EDUCATION, OCCUPATION, INCOME, AND LENGTH OF COMMUNITY RESIDENCE. THE FINDINGS INDICATED THE WAYS THE INFORMATION SOURCE USED VARIES WITH EDUCATIONAL BACKGROUND, OCCUPATION, AND KIND OF DATA SOUGHT. (AL)

FINAL REPORT
Project No. 2583
Contract No. OE 4 10 193

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PATTERNS OF ADULT INFORMATION SEEKING

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September, 1966

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
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PATTERNS OF ADULT INFORMATION SEEKING

Project No. 2583
Contract No. OE 4 10 193

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With the assistance of Serena Wade, Matilda Rees,
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September, 1966

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I

INTRODUCTION

This report is the final technical report of research contract OE-4-10-193 awarded to Stanford University by the U.S. Office of Education to study the "Patterns of Information Seeking in Adult Education" with Edwin B. Parker as project director. The period of the contract was from June 1, 1964 to September 30, 1966.

Briefly stated, the purpose of the project was an exploratory investigation of instrumental information-seeking behavior in the general public. In other words, the question motivating the project can be stated as, "What kinds of people seek what kinds of information through what channels?" Thus the study had an "audience" rather than an "institutional" focus. We started with the potential audience and asked where they turned for education and information on various topics. We explored the use of both formal and informal communication channels for information, including use of the mass media and of interpersonal communication.

The project consisted primarily of sample survey interview studies in two very different California communities, San Mateo and Fresno. A brief sketch of the characteristics of these two communities is presented in Appendix I. The questions asked in these two surveys and the marginal responses to each question are presented in Appendix II. In the course of these surveys, various methodological studies were conducted in an attempt to improve and extend standard survey research methodology. These studies are referred to in Chapter II, which reports on the methods employed in the study, and in more detail in Appendix III, "(Intrahousehold Sampling Table)", Appendix IV, "(A Method of Analyzing Coding Reliability: The Random-

Systematic-Error Coefficient)", and Appendix VI"(Binary Coding)". Two experiments investigating the motives of information-seeking were also conducted as part of this study. These are reported in Appendix V, "Researching the Motives of Information Seeking." The research provided valuable research training for several graduate and two post-doctoral students in the Institute for Communication Research. It led to one Ph.D. Dissertation, three M.A. research projects and provided the research assistantship training required of other Ph.D. candidates in Communication Research. One student, Matilda Rees, presented a paper based on research conducted as part of this project in the student paper competition sponsored by the Pacific Chapter of the American Association for Public Opinion Research, January 1966. She was awarded the $50 first prize.

Chapter III presents the results of analysis of survey data on use of various sources of information, including participation in formal adult education, use of mass media, and the use of interpersonal sources for information. Chapter IV presents the results of analysis of survey data on information sources used for various topics of information, including national and international public affairs, local public affairs, occupational information or education, and information about leisure activities. Chapter V presents an analysis of the relation of achievement motivation to information seeking. Chapter VI reports an analysis of the relationship between affiliation motivation and information seeking. Some implications of the findings of the project are discussed in Chapter VII. A list of references is appended at the end of the report. The remainder of this introductory chapter reports a review of the research literature relevant to this project.

Review of Literature [1]

The literature concerning adult information-seeking behavior can be organized most easily by the type of source to which the adult turns when he needs answers to specific or general questions. The most formal source is an educational institution; the next sources on such a formality continuum would be the media, sources of information that imply no direct feedback from the receiver. The least formal source would be another individual. The discussion that follows will treat each of these information sources individually, discussing the evidence concerning the patterns of information-seeking behavior associated with each.

Participation in Adult Education

Adult education in the United States is an interesting phenomenon. Few studies have been undertaken that determine its scope and depth, and most that have been done -- with one notable exception -- have been constrained in their generalizations by the character of the educational institutions in the geographical area under investigation. The exception was the general description of adult participation in formal and informal educational pursuits undertaken on a national scale by Johnstone and Rivera of the National Opinion Research Center and published in 1965. The investigation began in 1962 and focused on the adult American population following termination of regular, full-time school attendance. Although some references will be made to earlier and more limited studies, most of the conclusions cited in this section of the review will come from the Johnstone and Rivera work because of its comprehensive nature and its national probability sample of some 12,000 American households.

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[1] This review was prepared by Serena Wade.

Approximately 25 million adults (about 20 per cent of the adult population) were found by Johnstone and Rivera to have been involved in some form of learning during the twelve months prior to June, 1962. Estimates based on smaller and more concentrated samples and on a narrower definition of educational activities are lower, between 12 and 15 per cent (London, 1963; Knox, 1965), with some as low as 7.8 per cent for adults over 14 years of age (Brunner, 1959). NORC found that about 17 million persons (17 per cent of the adult population) were enrolled in adult education courses. The true figure for participation depends largely upon activities included in the definition of education. The broad concept of "educational activity" used by NORC included all activities consciously and systematically organized for purposes of acquiring new knowledge, information or skills.

A capsule demographic view of participant characteristics is provided by Johnstone and Rivera:

> The adult education participant is just as often a woman as a man, is typically under forty, has completed high school or more, enjoys an above-average income, works full-time and most often in a white collar occupation, is married and has children, lives in an urbanized area but more likely in a suburb than a large city, and is found in all parts of the country, but more frequently in the West than in other regions. (p. 8)

Participation is skewed toward higher socio-economic status, suburban living, and support of a family in middle or upper-middle life style. Previous studies also reported these same trends: from 1957 census data, participants were from the under-45 age group, had high school diplomas, and were in the higher echelons of the labor force (Booth, 1961); in Contra Costa County, California (N = 6610), participants were higher in socio-economic status than the county average, and over-represented the younger and female portions of the population (Chapman, 1959); from a small city in upstate New York (N = 618), 82 per cent of the participants were married and worked full time, only 40 per cent were blue collar workers (contrasted to 53 per cent of nonparticipants), and 25 per cent had at least some college (Mizruchi, 1960).

The details from the NORC study followed earlier patterns. The median age of participants was 36.5 years, more than six years younger than that of the sample. No other personal or life-style characteristics set participants apart from nonparticipants; even racial differences disappeared when education was controlled. Participants had nearly one full year more formal education than nonparticipants, with the rate of participation climbing from 4 per cent among persons with no formal schooling to 47 per cent among those who had attended four years of college.

Formal schooling had the most powerful influence on participation in the NORC findings. In an earlier study, high school graduates were found to be twice as likely to participate in adult education activities (Greene, 1962). Education, occupation and income combined in the NORC data provided strong prediction of participation:

> a person who had been to college, who worked in a white-collar occupation, and who made more than $7,000 a year was about six times more likely to have been engaged in ... [adult education activities] than a person who had never gone beyond grade school, who worked in a blue-collar occupation, and whose family income was less than $4,000 per year. (p. 7)

Despite this enormous middle class loading on socio-economic factors, most of the focus of participation was on non-academic subjects. Mizruchi found the most preferred courses to be arts and crafts, general information, business, and homemaking; the NORC study reported 33 per cent of the learning activities were vocational, 20 per cent recreational, 12 per cent academic, and only 3 per cent public affairs or current events. Vocational and family life subjects represented 44 per cent of all normal courses and 47 per cent of the self-study courses. The emphasis in adult education content was definitely on practical information rather than general cultural development. Accordingly, it is not surprising that NORC found organized adult learning often took place in institutions whose main concerns were other than formal education. Participants were active in programs of private business and professional schools, governmental agencies, private businesses (in-service training for employees), YMCAs, churches, hospitals and medical centers.

The motivation for participation in adult education courses is frequently occupational acquisition or advancement; desire for intellectual stimulation plays only a small role. In Contra Costa County, 33 per cent of the participants cited occupational advancement as their primary reason for attendance, as opposed to 14 per cent educational advancement and 14 per cent cultural-intellectual interests. In the NORC sample, 33 per cent wanted to prepare for a new job and an additional 20 per cent desired supplementary training in work already entered. London and Wenkert (1964) found that blue collar participants were more interested in training for a different job while white collar participants sought aid for their present jobs.

Transfer of motives for participation occurred with changes in the life cycle in the NORC findings. For younger adults, job-centered needs prevailed while for those over 40, general knowledge, leisure-centered needs were more important. In a study of 646 middle-class adult education participants Phifer (1964) found a slight change in interests from young adulthood (25) to middle age (44). High school graduates became less interested in family-home-job concerns with age, and more interested in the liberal education-cultural-civic area. College graduates showed no such change with age. The most powerful indicators of adult education interests were sex and level of education; more women and more adults with college training were interested in cultural offerings.

Participants in adult education are also likely to be active in other social and community activities. Mizruchi reported 43 per cent of the participants were involved in organizations such as the PTA, church groups, etc. London (1963) found that those persons who preferred formal organizations to sports or hobbies in their leisure time were more likely to be participants. More general sociological studies have found that community participation was significantly related to socio-economic status (Bronfenbrenner, 1960; Devereux, 1960). This is consistent with the NORC results showing the strong influence of socio-economic position on participation in adult education.

The NORC data indicated that most adults in the United States are aware of educational facilities for continued learning. However, the more specific the study need, the lower the awareness of instruction availability. Identical courses in different institutions also seem to come to the attention of different segments of the population; institutional prominence and the educational background of the prospective participant interact to determine the type of individual awareness.

The data from NORC and other studies indicate that American adult education should be thought of as "continuing education" in the sense of applying systematic learning processes to particular life demands.

The preponderance of middle and upper-middle class participants in adult education is an indicator of its focus. London and Wenkert have discussed several myths regarding obstacles to lower class participation in adult education. In their conclusions, they pointed out that the schools' orientation toward middle class values, increasingly emphasizing their roles as only steppingstones to higher education, are biased against meaningful participation by children who do not or cannot share these values. Consequently, the greater likelihood of unsatisfactory educational experiences in blue-collar childhood increases the probability of psychological defense mechanisms against "bookish" activities associated with schooling in blue-collar adulthood. Neither are those in the lower classes socially reinforced by participating with friends who have like interests in adult education as are those in the higher social strata.

Johnstone and Rivera speculate that 70 per cent of the adult population has needs that might conceivably be satisfied in a learning situation, but that less than 50 per cent of this conceivable audience could seriously be considered as potential participants. Socio-economic and psychological variables preclude such maximum use of institutionalized information sources in the sphere of adult education if there is no change in the institutions and kinds of education now available. However, if federal and/or state legislation comes to play a more active part in the structure and function of adult education, and in the motivational encouragement of adults least likely to participate, then the use of available facilities might well approach the figure suggested by Johnstone and Rivera.

The Use of Mass Media for Information

At least two distinct problems are associated with the literature on mass media as information sources. First, there is a plethora of studies with adequate data about the extent of exposure to media in general but without generalizable conclusions regarding what specific messages are perceived by whom. Second, a more basic problem lies in the definition of information itself. It is difficult to find available studies with definitions broad enough to apply to media in general and narrow enough to exclude the peripheries of entertainment. Survey research categories have generally not been constructed with this definitional problem in mind.

Media in America are pervasive: a recent estimate places television in more than 90 per cent of American homes; newspapers are read by more than 85 per cent of American adults while magazine saturation comes close to 70 per cent; less than half of the population now attends movies regularly, so devastating has been the impact of television, and only 25 to 35 per cent read books regularly (Schramm, 1966). The average home uses television over 44 hours a week, with the range from 11 to 80 hours (Loevinger, 1965).

Demographic data on media consumption have been available for nearly 20 years and many conclusions drawn from newspaper readership studies as early as 1949 still hold for television audiences of this generation. Numerous studies repeat the information-seeking trends found in adult education participation: those who use the media for information more often occupy a higher socio-economic position than those who are content with entertainment (Schramm and White, 1949; Steiner, 1963). Interviews with senior citizens in the San Francisco Bay Area led Schramm (1966) to conclude that the use of media for information increases with age.

From a probability sample of Wisconsin adults (N = 1057), Westley and Severin (1964a) found that the non-reader of newspapers was more frequently of lower socio-economic status, was a rural dweller, belonged to few if any voluntary organizations, and seldom used the public library. Age and broadcast media use were not good indicators of newspaper readership in this study. A recent look into rural family media behavior in Louisiana (Holmes, 1965) found that newspaper and magazine consumption was greater when readers were white, had middle-aged heads of household who had a high school education or better, and were farm owners as opposed to farm laborers, retired or unemployed.

While previous studies had shown an inverse relationship between education and general television viewing, Samuelson, Carter and Ruggels (1963) interviewed 203 adult males in Redwood City, California. They measured both media behavior and extent of role involvement (i.e., the combined weight of occupational-social activity and family responsibilities). After controlling for the time spent on other media and the extent of involvement in other activities, they found a positive relationship between education and time spent viewing television. They concluded that education-associated roles displaced time which could have been used for media. Among the highly educated, available media time was more likely to be used on print media than on television.

The satisfactions obtained from media attention also vary with demographic and psychological variables, the most important of which appears to be education. Westley and Barrow (1959) have identified a news-seeking attribute which is independent of intelligence; the authors termed it a positive value on information that is potentially relevant to the individual's orientation to his surroundings. McLeod and Ward (1965) studies the effect of alienation on mass media use; they suggested that education increased the need for information and reduced the need for escape. When a single information source was not available, substitutions were more likely with an increase in educational level (Cannell and Sharp, 1958).

From the same Wisconsin sample, Westley and Severin (1964b) found that the amount of education and socio-economic status were strongly related to credibility of newspapers and distrust of television as information sources. Professionals in the sample rated newspapers highest while farmers gave newspapers lowest credibility. Urban residence and high mobility were also good predictors of newspaper credibility. Carter and Greenberg (1965) reported the following percentages of media news sources from a telephone survey of about 500 adults in San Jose, California: newspapers 44 per cent, television 32 per cent, radio 14 per cent, interpersonal sources 3 per cent. Television had higher believability in cases of conflicting reports but newspaper credibility increased with educational level. People tended to rate as most believable the medium they most frequently used.

The influence of education and socio-economic status on the use of media for information is perhaps most vivid in the sub-area of educational television. Established to serve the informational-educational-cultural needs of the American population, ETV programming represents a radical departure from commercial television fare and suffers from a popular television-is-for-entertainment attitude which inhibits the growth of its small but loyal audience. Although the number of ETV viewers grows each year, the percentage of the available audience remains under 5 per cent on a national average (Schramm, Lyle and Pool, 1963).

The ETV viewer is very similar to the participant in adult education. The ETV viewer can be male or female, is usually white and more highly educated than the average, has middle or upper-middle social status, works in a white collar occupation with better than average income, and participates in community, welfare or civic organizations. The typical ETV viewer also displays other media behavior associated with "culture": he reads more books and high quality magazines, newspaper editorials and public affairs; he views serious materials on commercial television, listens to good music on the radio, and attends local opera and symphony performances. There is evidence that ETV displaces commercial television since the typical ETV viewer spends no more time with television than does the average commercial television viewer; if anything, he spends less (Schramm, Lyle and Pool, 1963).

Differential media content has led some researchers to characterize children who are both heavy users of TV and light users of print as predominantly fantasy-seekers and children who are both heavy users of print and light users of TV as predominantly reality-seekers (Schramm, Lyle and Parker, 1961). Displacement data from a study of library circulation by Parker (1963) appear to support the fantasy label for television. He found that television displaced more fiction than nonfiction circulation for both children and adults.

Substitution data from a study of news-seeking behavior in a newspaper strike (Samuelson, 1960) seem in retrospect to uphold the reality distinction for newspapers; those who substituted different newspapers were better informed than those who substituted radio or television. Peripheral data in the NORC study showed that use of ETV for both formal courses and general information was in line with earlier, more segmented data from Schramm, Lyle and Pool. Johnstone and Rivera found that only 290,000 out of 25 million adult education participants had taken courses on television, as opposed to an estimated national audience of 6,200,000 regular and 12,200,000 occasional ETV viewers as of June, 1962. These findings support the contention that television is perceived primarily as an entertainment source.

The studies on diffusion of information, however, do not fully support the fantasy-reality dichotomy. Deutschmann and Danielson (1960) found about 88 per cent of the population first became aware of major news events (e.g., President Eisenhower's illness, launching of Explorer I) through the mass media, usually television or radio. Newspapers tended to be supplementary media. The entire series of studies conducted on the diffusion of news regarding the Kennedy assassination showed that more than half of the public learned of the assassination through personal conversations and the rest through radio and television (Greenberg and Parker, 1965). In almost all cases, people turned to the media for additional information after first hearing the news.

Caution must be used in evaluating the evidence from these studies. It is well to remember that first exposure to a critical event does not necessarily imply that the information was sought by the receiver. Although the data do not allow firm conclusions, it appeared that detailed and explanatory information-seeking was focused in newspapers while the electronic media appeared to be used as awareness sources, with implicit recognition of their speed of reporting. The Kennedy assassination was an exception to this pattern. The cancellation of regular television programs and the rapid, detailed television news coverage was sufficient to change normal habit patterns.

Many studies on political news exposure have shown a selection of news based mainly on predisposition and involvement. The level of information is still related to socio-economic variables (Schramm and Carter, 1959; Kraus, 1962).

In sum, then, the data indicate that use of media to satisfy specific informational needs is more frequent with higher socio-economic status, particularly a higher educational level. To rest all differential media use at the doorstep of educational level is undoubtedly an oversimplification; other factors, such as advancement in the life cycle, interact to change the tendencies inherent in educational training. However, because there is less research available on variables other than education, evidence that documents their relative influence on media use is lacking.

The Role of Interpersonal Sources in Information Exchange

A review of research on the role of interpersonal communication in adult information-seeking behavior must consider both the sender and receiver in the communication exchange. The relevant literature includes selected portions of the important studies in personal influence (the two-step hypothesis, for example), information diffusion, and adoption of innovations. The data on adult education participation and informational use of mass media, discussed above, only secondarily consider the psychological and social variables required to predict such behavior. In contrast, the studies of interpersonal information exchange are largely concerned with the total situation in which such communication takes place. In general, these studies attempt to identify the place in the social structure and the roles enjoyed by individuals who are variously known as "opinion leaders" or "influentials", and the situational-psychological conditions under which information exchange may occur.

In a survey of women in Decatur, Illinois (N = 800), Katz and Lazarsfeld (1955) used a "snowball" sample to identify and confirm givers and seekers of information in situations where decisions had recently been made. The focus of this study was on two general questions: the social characteristics of opinion leaders and the relationship of leaders to followers. In their findings, the constraints on spheres of influence were clearly drawn; fewer women were able to identify individuals whom they considered generally influential than those who could pinpoint influentials in specific and implicitly defined areas.

The demographic-psychological correlates of leadership in these several independent areas (marketing, fashions, movies, and public affairs) were identified as age, social status, and gregariousness. Social status was least important of the three, and the influentials on each social level were those most frequently identified as gregarious. Influentials were also greater consumers of mass media than those who turned to the influentials for information.

Another correlate of influence was heightened interest in a given area when personal associations were made with others interested in the same area. Finally, the authors found equivalence in age and social status between the source and receiver when the flow of influence was outside the family, but a downward flow (old to young, men to women) when the flow of influence was within the family.

An investigation into different types of influence led Merton (1957) to a case study of influentials of Rovere, a community of 11,000 on the eastern seaboard. On the basis of interviews with 30 people named at least four times as having influenced a personal decision of an informant in the study, Merton was able to identify two distinct kinds of opinion leader, the "cosmopolitan" and the "local". The former was more influential in areas which relied on his specialized information or skills while the latter was a leader by virtue of his position in the local social hierarchy. Similar differences were also reflected in "cosmopolitan" and "local" communication behavior. These types of opinion leaders were sought differentially as the need for information in each area arose. Merton also found both a tendency for individuals to be most influenced by their peers in the social structure and a dispersion of influence throughout the social strata.

A series of experimental investigations into information diffusion known as project Revere was undertaken in the northwest by De Fleur and Larsen (1958). These researchers had several questions in mind when they cooperated with the military in dropping leaflets on several average communities: the feasibility of such a propaganda technique; the relation of leaflet density to actual communication; formulation of mathematical diffusion models; and the determination of optimal stimulus conditions, accuracy of recall, and channels of diffusion through extensive personal interviews. The result of this unusual study series are relevant to both opinion leadership and diffusion.

Where more leaflets were dropped, more people knew about them. Regardless of the leaflet density, the flow of information was from children to their parents. The authors identified children as important neutral transmitters of the message, while adults -- because of their social positions -- not only transmitted but also influenced message reception. The high reliance on interpersonal communication for message diffusion (from 50 to 66 per cent, according to stimulus conditions) gave support to the two-step flow. In general, where a great deal of information was available (i.e., leaflet density was heavy), message diffusion took place at all social levels through a fairly balanced operation of direct and socially mediated channels.

The factor that influenced accuracy of recall was the channel through which contact was first made with the information. Those with direct contact with the leaflets were significantly more accurate in their recall than those who learned of the message through social channels. The authors suggested that the inaccuracy related to oral diffusion came about because this type of activity took on many of the characteristics associated with rumoring. Where leaflet density was high, compliance with the message was significantly related to directness of contact and accuracy of recall. In the authors' opinion, the theoretical distinction between contact and communication was shown to be empirically meaningful.

From a series of studies on the diffusion of new drugs among physicians, Coleman, Menzel and Katz (in press) found that a doctor's integration in the network of interpersonal communication was among the most important predictors of the speed and frequency with which he adopted new drugs. Data based on a census of doctors in four midwestern communities included survey coverage of the physician's background, attitudes, diagnostic styles, drug experiences, plus sociometric items and a careful tally of prescriptions at local pharmacies. Doctors who were early adopters of a new drug were more frequently named as friends of other physicians and more often cited as worth consulting for advice or information. These same early-adopting physicians were also more active outside the local medical community; they had more exposure to professional journals and attended professional meetings more frequently. In the general mold of "opinion leaders," these physicians were relayers of relevant information from the world outside to their local colleagues.

These landmark studies by Katz and Lazarsfeld, Merton, De Fleur and Larsen, and Coleman _et_ _al_. offer several generalizations about the phenomenon of personal influence: influentials are close associates of those whom they influence and share the same social status characteristics; influentials specialize in a single sphere of knowledge and are rarely leaders in several spheres; influentials usually expose themselves more frequently to the mass media, thus occupying a gatekeeper position in an information flow (Katz, 1963).

A modification of the hypothesis of a two-step flow of information -- from mass media to influentials to followers -- was made necessary by the results from a study of voting behavior (Berelson, _et_ _al_., 1954). This study found that while the usual generalizations regarding competence, accessibility and media contact held for influentials, they were also more likely than non-influentials to have sought information from other individuals. The flow of information appeared to move in several steps, from media through various influentials, and finally to followers.

Research which focuses on the seeker in the interpersonal communication process is scarce. Troldahl, Van Dam and Robeck (1965) studied information-seeking behavior with regard to civil defense in Detroit.

During the 1962 missile crisis, subjects were interviewed from lists of persons who contacted the local civil defense office. The authors found that those who sought information from this institutionalized source were more often opinion leaders, although they did not perceive themselves in these roles; seekers also had a slightly higher national news level than non-seekers but were not more aware of the local civil defense program. Troldahl and Van Dam (in press), in another study of mass media and opinion leaders, found that persons sought for opinions on a major news topic and persons seeking them did not differ significantly in their exposure to mass media news.

There has also been some work done on the communication behavior of research scientists (e.g., Menzel, 1958, 1960; see also the review by Paisley, 1965). Interviews with scientists showed a large portion of their time was taken up in attending the massive number of professional channels of communication -- journals, books, conferences, etc. At the same time significant information was obtained in unexpected ways. Menzel reasons that because materials relevant to his specialty are dispersed over many journals and other formal information sources -- some in areas not defined by him as within his sphere of interest -- the scientist must depend on friends and colleagues who work in other areas to call his attention to pertinent information. Menzel goes on to clarify the functions of formal and informal channels for the scientist: formal channels serve most efficiently when specific information is needed, but informal channels are indispensable for exposure to potentially significant materials and for judgments of information quality.

These recent studies seem to give added weight to a multi-step flow of information. While interpersonal communication and influence consistently occur between peers in social status, there may be overlapping spheres of activity for those who give information and those who request it. In the case of laymen, generalized influence passes from the top to the bottom of the social hierarchy. Although there are no studies tied explicitly to gradations of socio-economic status, direct and inter-personal influence may take place when an individual's social position allows him contact with several different strata within the same general socio-economic level. In the case of the scientist, overlapping and complementary interests allow one specialist to cue the other into potentially valuable information exposure.

Clarification of the interacting functions of information sources is long overdue. An important clue has been given by Menzel in his study of scientists. Further data are needed on the conditions under which laymen consult different sources for specific purposes; it is possible that inter-personal communication serves the same "cueing" and "filtering" needs for the man on the street as it does for the scientist.

II

PROCEDURE

We chose two contrasting California communities as locales for data collection. Brief sketches of San Mateo and Fresno in Appendix I indicate some of the differences between the communities that might affect information-seeking strategies -- differences in average educational level, in dominant occupations, in available facilities and services, etc. Five hundred and seventy-five interviews were obtained in San Mateo in January, 1965. Twelve hundred and ninety-four interviews were obtained in Fresno in June and July, 1965.

Interview schedule development. Semi-structured tape-recorded interviews with selected respondents in the Stanford area provided guidelines for the development of an interview schedule focusing on information seeking in its many forms: adult education activity, use of the mass media, interpersonal communication, etc. The interview schedule was divided into the following major sections (listed in order of administration):

- (A) Mass media, books, libraries, expert interpersonal sources, etc. -- extent of use and reasons for use.
- (B) Information seeking related to leisure activities, local and national public affairs.
- (C) Occupational information seeking.
- (D) Educational history.
- (E) Participation in adult education.
- (F) Projective "values" questions.
- (G) Personal characteristics.

The interview schedule was pretested in the Palo Alto - Redwood City area in December, 1965, with some resulting modifications. Final question texts are presented in Appendix II.

Sampling. In both cities multi-stage probability samples were drawn, beginning with block samples from the 1960 Census. Sampling of dwelling units within blocks and of respondents within dwelling units was accomplished as follows:

(1) Dwelling-unit enumeration and sampling. Each randomly sampled block in the two cities had to be enumerated specifically for this study because of rapid population growth and the unavailability of up-to-date city directories. Once the sequence of occupied dwelling units had been listed with great care, every fifth dwelling unit after a random starting point was selected into the sample.

(2) Enumeration and sampling of respondents within dwelling units. The population of our study was defined as English-speaking residents of the two cities, over 18, no longer in school. Each interview schedule contained a sampling table (reported by Paisley and Parker, 1965) enabling the interviewer to select a single respondent from among the members of a household meeting these criteria. The sampling table is reproduced in Appendix III.

Field procedures. Interviewing in the San Mateo survey was conducted under subcontract by Field Research Incorporated of San Francisco. Fresno interviewing was conducted by a crew of interviewers employed by the Institute for Communication Research and supervised by an Institute staff member. Similar interviewer training sessions were held for both groups.

Each interviewer's assignment consisted of several blocks scattered across the city. Three calls per household were permitted in San Mateo and five in Fresno. In addition, random subsamples of not-at-homes and refusals were reassigned to "clean-up" interviewers whose completion rates were above average. The quality of incoming work was carefully monitored and, in one case, a set of fictitious interviews was detected and returned to the field.

The final completion rate in San Mateo was about 65 per cent, while in Fresno it exceeded 80 per cent. A distinction was maintained between initial respondents and "reclaimed" respondents so that biases introduced by non-response could be inferred to some extent.

Editing, coding, machine preparation. Completed schedules were edited for continuity and legibility, then turned over to coders. Codes were developed for unstructured responses, and reliability tests were run on every coding task in which coders' judgments could lead to disagreement. Several codes (e.g., those for Section F of the schedule) passed through many versions before satisfactory reliability could be obtained using the Scott formula (1955). In connection with this project Funkhouser developed a "random-systematic-error coefficient" that greatly facilitated the diagnosis of faulty codes (See Appendix IV).

Certain intransigent response sets led Farr to develop a "binary coding" procedure that allowed coders to reach a complex coding decision one step at a time by evaluating a different attribute of the response at each branch in a binary decision tree. Although developed independently and based on different concepts, Farr's "binary coding" resembles a coding procedure reported by Schutz (1958-1959). "Binary codes" were consistently more reliable than the conventional codes they supplanted (See Appendix VI).

All data from the two surveys were transferred to punched cards and later to magnetic tape for processing on the Stanford 7090 and B-5500 computers.

Overview of the analysis. The simple purpose of the analysis was to identify and to interpret patterns of information use among various subgroups of the population. It was realized from the outset that personal and situational factors correlated with information use would have to be considered jointly: the final analysis model would have to be multivariate. In general, univariate distributions (reported comprehensively in Appendix II) were used to map responses across the sample, while bivariate tables served to map responses within significant population subgroups and multivariate analyses assisted in interpreting relationships among several factors that are most strongly correlated with each information-use behavior or attitude.

III

INFORMATION SEEKING AND COROLLARY BEHAVIORS BY SOURCE OF INFORMATION

1. Participation in Adult Education

Level of Participation

Respondents were asked whether they had received instruction in the past five years by means of evening classes, lectures, correspondence courses, group discussions, television lessons, on-the-job training, private lessons, independent study, and any other instructional mode they could name. Most respondents had participated in one or more of these activities during that time period, the percentage of participation ranging from 51 for lectures (in San Mateo) to 6 for private lessons (in Fresno). Taking an average of both cities, the most-mentioned activities are independent study, lectures, group discussions, evening classes and on-the-job training (tied), television lessons, private lessons, and correspondence courses, in that order.

On the whole, Fresno residents participate less than do their San Mateo counterparts. Men account for most of this difference. When tabulated against demographic attributes on which residents in the two cities are known to differ (Tables III-2 through III-9), the intercity participation difference is reduced and there are many reversals -- higher participation among Fresno residents within a demographic subgroup. Therefore we may conclude with some assurance that respondent characteristics, and not some essential difference in the cities _qua_ cities, are the chief predictors of participation level.

Table III-1

Percentage of High Participation in Adult Education

	All vocational instruction		All arts, crafts, household skills		All liberal arts		Total adult education		N	
	SM	F	SM	F	SM	F	SM	F	SM	F
SEX										
Male	70	35	25	30	36	32	60	33	229	469
Female	39	30	44	08	50	47	49	23	346	825
AGE										
18 - 39	61	42	35	21	54	49	67	40	195	521
40 - 59	57	31	45	17	42	41	59	23	239	475
60 and over	28	15	24	05	35	28	24	09	140	297
EDUCATION										
Less than high school	35	14	31	14	28	31	22	11	110	518
High school graduate	47	34	36	19	42	40	47	27	159	301
Some college	58	50	40	20	51	52	69	40	203	309
College graduate	64	49	37	08	55	62	68	50	100	155
OCCUPATION										
Professional, managerial	65	48	30	11	45	50	65	46	193	265
White collar	53	52	41	10	50	48	55	31	145	291
Blue collar	57	19	38	26	43	34	49	20	141	545
Housewife, or never worked	10	13	38	03	39	40	32	14	69	176
INCOME										
Less than $7,000	48	24	35	16	46	35	45	18	176	800
$7,000 - 9,999	54	39	33	17	47	47	54	37	154	257
$10,000 - 14,999	53	53	39	17	43	56	61	47	142	177
$15,000 and over	52	44	41	06	41	52	59	28	95	54
RESIDENCE										
5 years or less	55	40	36	22	48	43	57	37	229	248
More than 5 years	49	30	37	14	43	41	51	24	345	1037

Criteria for High Participation:

All vocational instruction - 1 or more responses
All arts, crafts - 1 or more responses
All liberal arts - 1 or more responses
Total adult education - 3 or more responses

Demographic Correlates of Participation in Evening Classes

About 31 per cent of the respondents in the combined sample had attended evening classes during the past five years. Many distinct and interesting patterns are hidden within the aggregate percentage (See Table III-2). One factor that distinguishes among participating subgroups is the subject matter of the class, categorized broadly as "vocational", "arts, crafts, and household skills", and "liberal arts" (including religion and civic affairs).

Vocational evening classes. Not surprisingly, men are about twice as likely as women to report attending vocational evening classes. There is a steep decline in attendance with age. Even so, some retirement-age respondents attended classes that we classified as vocational on the basis of subject matter. There is always the possibility, of course, that the same subject matter satisfies avocational interests as well.

Evening classes in arts, crafts, and household skills. While men attend vocational evening classes, women in the two cities are attending evening classes in arts, crafts, and household skills. Women in the sample were twice as likely as men to report having attended such classes in the past five years.

Except for a gradual decline in attendance with age, participation in arts, crafts, and household skills evening classes is not consistently associated with any other demographic attribute of participants. Strong predictors of this behavior must be sought among interacting sets of demographic attributes taken together or among attitudes of participants.

TABLE III-2

Percentage of Evening Class Attendance by Sex, Age, Education, Occupation, Income and Length of Residence

	Subject Matter									
	Vocational		Arts, Crafts, Household Skills		Liberal Arts		Miscellaneous		N	
	SM	F	SM	F	SM	F	SM	F	SM	F
SEX										
Male	19	18	05	04	12	07	04	02	227	469
Female	10	10	11	07	06	09	04	02	348	825
AGE										
18 - 39	18	20	10	06	14	10	04	03	195	521
40 - 59	15	12	10	06	09	07	03	02	239	475
60 and over	04	03	06	04	01	04	00	00	140	296
EDUCATION										
Less than high school	05	04	07	04	04	04	00	02	110	518
High school graduate	13	15	09	04	04	06	01	02	159	301
Some college	18	22	09	09	12	11	04	00	203	309
College graduate	13	19	08	11	13	14	03	05	100	154
OCCUPATION										
Professional, managerial	15	21	06	11	10	11	02	03	193	264
White collar	14	18	11	07	08	09	05	00	145	291
Blue collar	16	10	07	04	11	07	02	02	141	545
Housewife or never worked	04	05	10	04	06	05	03	02	69	176
INCOME										
Less than $7,000	10	10	07	04	07	06	02	02	176	800
$7,000 - 9,999	13	18	09	09	14	07	03	03	154	256
$10,000 - 14,999	18	24	11	10	07	09	01	00	142	177
$15,000 and over	13	13	07	06	09	13	05	00	95	54
RESIDENCE										
5 years or less	15	14	09	05	10	08	02	02	229	248
More than 5 years	13	13	08	06	07	07	03	02	345	1037

Cases with missing data on the demographic variables omitted.
Within each city and within each attirubte-category, percentages sum to 100% minus no response and non-participation.

Liberal arts evening classes. In San Mateo men are about twice as likely as women to have enrolled in liberal arts evening classes in the past five years. The ratio reverses in Fresno. In both cities it is the younger residents who engage in this activity, and there is a consistent increase in percentage of participation with educational level. Neither occupation nor income is a consistent predictor (an interesting corollary of this observation is that with educational level controlled, blue collar workers are as well represented among participants as members of other occupational groups in Fresno, better represented in San Mateo).

Adults who enroll in evening classes to study liberal arts, fine arts, crafts, and household skills are probably motivated by more idiosyncratic and personal goals than adults who enroll in vocational evening classes. It is not surprising, therefore, that the former group is not readily characterized in terms of demographic attributes. We need to get closer to each adult's attitudes and purposes in life to interpret these behaviors.

In both cities vocational evening class attendance is very low among respondents who did not complete high school. High school graduates and college graduates are well represented, but respondents who attended college without graduating are proportionately the most significant body of vocational evening class attendants.

Although vocational adult education is usually associated with the teaching of blue collar skills, in these cities the professional, managerial, and white collar occupational groups are proportionately as well represented as blue collar workers. In Fresno professional and managerial respondents out-attend blue collar respondents by a factor of two to one at the lowest educational levels; at high school and college levels, all three occupational groups participate.

Failure of blue collar workers with less than a high school education to engage in an activity with great reward potential provides corroborative data for the London-Wenkert analysis of "obstacles to blue-collar participation in adult education" (1964). It is interesting that San Mateo blue collar workers, in an area of increasingly automated light industry, do attend vocational evening classes in strength, suggesting that job insecurity may well counterbalance the "obstacles" and bring blue collar workers, particularly those with more formal education, into the adult education fold. In San Mateo 13 per cent of the blue collar workers with high school or less and 21 per cent of the blue collar workers with some college had attended vocational evening classes. The comparable percentages were slightly lower for white collar workers.

Another popular impression of vocational adult education participants is that they stand close to the bottom of the economic ladder. Our data indicate, however, that the income groups above $7,000 provide as many vocational evening class attendants, in proportion to their population strength, as does the under-$7,000 income group. In Fresno, higher income correlates with greater vocational participation only for adults with less than a high school education.

A composite profile of the respondent especially likely to attend vocational evening classes would therefore show us a young man with some college and a current family income in the $10,000-$15,000 range, probably a member of the professional, managerial, or white collar groups.

Demographic Correlates of Lecture Attendance

Five-year lecture attendance was roughly 50 per cent in San Mateo and roughly 30 per cent in Fresno. Respondents most often mentioned subject matter in the liberal arts, including religion and civic affairs (about 18 per cent overall). Vocational subject matter was mentioned by about 13 per cent of the respondents, while arts, crafts, hobbies, sports, and household skills were mentioned by only 6 per cent (See Table III-3).

Liberal arts lectures. While women may attend more liberal arts lectures than men, and while the young may be more likely to attend than the old, the single striking correlate of attendance is education. About 23 percentage points separate the attendance levels of those who have completed college and those who failed to complete high school. Almost one out of three of the former, but fewer than one out of ten of the latter, report attending a lecture with liberal arts subject matter. Correlation of occupational level with liberal arts lecture attendance occurs only at the college level; income has no consistent relation to this type of adult education.

Vocational lectures. Not surprisingly, men are 2 1/2 times as likely as women to have attended a vocational lecture. Age is not a correlate of attendance, except that the over-60 group is low. It might be expected that newcomers to the community would be more likely to attend than long-term residents, but the data do not bear out this expectation.

Attendance at vocational lectures is strongly and positively related to education, occupation, and income. At the high school level, those who are already in higher income brackets and who have already moved into higher occupations are more likely to attend lectures to maintain or improve vocational skills; these relationships are discernible but less strong at the college level. The data point to participation in vocational lectures as a perceived key to occupational mobility.

TABLE III-3

Percentage of Lecture Attendance by Sex, Age, Education, Occupation, Income and Length of Residence

	Subject Matter									
	Vocational		Arts, Crafts, Household Skills		Liberal Arts		Miscellaneous		N	
	SM	F	SM	F	SM	F	SM	F	SM	F
SEX										
Male	27	14	02	04	17	15	06	02	227	469
Female	10	06	10	06	24	16	06	02	348	825
AGE										
18 - 39	15	12	06	05	28	15	07	02	195	521
40 - 59	22	08	08	06	21	16	05	02	239	475
60 and over	09	04	08	02	14	15	04	01	140	296
EDUCATION										
Less than high school	07	02	05	03	09	07	03	00	110	518
High school graduate	12	10	10	02	16	13	04	00	159	301
Some college	20	15	06	07	29	20	06	02	203	309
College graduate	26	14	05	13	29	33	10	06	100	154
OCCUPATION										
Professional, managerial	27	19	06	09	24	28	05	03	193	264
White collar	14	09	09	04	23	16	09	01	145	291
Blue collar	14	06	04	02	18	10	02	00	141	545
Housewife or never worked	03	01	07	08	22	13	06	02	69	176
INCOME										
Less than $7,000	11	05	06	03	21	13	06	00	176	800
$7,000 - 9,999	16	12	06	06	21	16	03	04	154	256
$10,000 - 14,999	18	17	09	11	20	22	07	02	142	177
$15,000 and over	23	17	07	04	23	30	06	04	95	54
RESIDENCE										
5 years or less	16	11	08	04	21	17	05	02	229	248
More than 5 years	16	08	06	05	21	15	06	01	345	1037

Cases with missing data on the demographic variables omitted.
Within each city and within each attribute-category, percentages sum to 100% minus no response and non-participation.

Lectures on arts, crafts, and household skills. Just as vocational lectures are a man's province, lectures on arts, crafts, and household skills seem to be a woman's. This is true despite the fact that household skills are mentioned in only one-half of the reports in this category. Many of the household skills, moreover, are typically mastered by men (e.g., plumbing, electricity). Some of the apparent sex differences in this behavior may perhaps be attributed to coders' judgment that a man learning a practical skill must be engaged in vocational education while a woman attending the same lecture is acquiring a household skill.

In a pattern that will appear again in other modes of studying arts, crafts, and household skills, attendance at such lectures is essentially uncorrelated with age, education, occupation, or income.

Demographic Correlates of Correspondence Course Enrollment

Participation in correspondence courses stands at only 7 per cent in both cities, and most of the few respondents who mentioned this mode of study were men. The subject matter of correspondence study is almost exclusively vocational (See Table III-4).

Although there are exceptions, the typical correspondence course participant, as he is revealed in these data, is young and relatively new to the community. He has completed high school but probably not college. He is likely already to have reached a higher status occupation, but his income is only in the middle range.

Demographic Correlates of Participation in Group Discussions

The demographic subgroups participating in group discussions are clearly the same groups from which lecture audiences are drawn. The same

TABLE III-4

Percentage of Correspondence Course Participation by Sex, Age, Education, Occupation, Income and Length of Residence

	Subject Matter									
	Vocational		Arts, Crafts, Household Skills		Liberal Arts		Miscellaneous		N	
	SM	F	SM	F	SM	F	SM	F	SM	F
SEX										
Male	09	08	00	01	02	02	03	01	227	469
Female	02	02	00	01	01	01	00	01	348	825
AGE										
18 - 39	09	05	01	00	04	02	02	01	195	521
40 - 59	03	03	00	00	00	00	00	00	239	475
60 and over	00	01	00	01	00	00	00	00	140	296
EDUCATION										
Less than high school	00	00	00	01	02	00	00	00	110	518
High school graduate	03	05	00	00	01	00	00	00	159	301
Some college	06	08	00	00	01	02	02	00	203	309
College graduate	06	02	00	02	02	02	00	00	100	154
OCCUPATION										
Professional, managerial	08	05	01	01	02	02	01	00	193	264
White collar	02	04	00	00	00	01	01	01	145	291
Blue collar	06	04	00	01	02	00	01	00	141	545
Housewife or never worked	00	01	00	00	01	00	00	01	69	176
INCOME										
Less than $7,000	02	03	00	00	01	00	00	00	176	800
$7,000 - 9,999	08	04	00	01	03	00	02	00	154	256
$10,000 - 14,999	05	06	00	01	01	02	00	01	142	177
$15,000 and over	02	02	00	00	00	02	02	00	95	54
RESIDENCE										
5 years or less	06	06	00	01	03	03	01	00	229	248
More than 5 years	03	03	00	00	00	00	00	00	345	1037

Cases with missing data on the demographic variables omitted.
Within each city and within each attribute-category, percentages sum to 100% minus no response and non-participation.

correlations of this activity with age and education are evident. Professional-managerial men make up the majority of participants in vocational group discussions. Higher income correlates positively with vocational discussions only at the high school level in Fresno and at the college level in San Mateo, again seeming to indicate this mode of participation (as in the case of lectures) is a perceived means toward occupational mobility (See Table III-5).

Women are in the majority in group discussions dealing with liberal arts, arts and crafts, and household skills. Not surprising, therefore, is the absence of any relationship between these types of group discussion and occupation or income.

Demographic Correlates of Television Lesson Viewing

Except for a trace percentage of content classified as vocational, television lessons chiefly provide information or instruction in liberal arts, arts and crafts, and household skills. Women are about twice as likely as men to have followed such lessons. The highest proportions of television lesson viewing are found among the young and the middle-aged, with the young proportionately stronger in the liberal arts audience and the middle-aged stronger in the arts, crafts, and household skills audience (See Table III-6).

The viewing of television lessons on arts, crafts, and household skills is essentially unrelated to education, occupation, income, or length of residence in the community. Education is a marked correlate of liberal arts television lesson viewing, however. This is an example of the role of content, rather than the mode of instruction, in determining the composition

TABLE III-5

Percentage of Group Discussion Participation by Sex, Age, Education, Occupation, Income and Length of Residence

	Subject Matter									
	Vocational		Arts, Crafts, Household Skills		Liberal Arts		Miscellaneous		N	
	SM	F	SM	F	SM	F	SM	F	SM	F
SEX										
Male	25	14	05	02	11	12	05	02	227	469
Female	07	04	07	04	19	16	04	02	348	825
AGE										
18 - 39	14	10	08	03	19	14	08	04	195	521
40 - 59	21	08	06	05	16	16	03	02	239	475
60 and over	04	04	05	00	13	12	03	00	140	296
EDUCATION										
Less than high school	08	04	08	01	11	08	00	01	110	518
High school graduate	10	08	05	04	18	15	04	01	159	301
Some college	15	12	08	04	15	18	07	03	203	309
College graduate	24	11	05	04	17	24	06	06	100	154
OCCUPATION										
Professional, managerial	25	17	07	02	13	21	04	04	193	264
White collar	08	08	06	04	18	18	07	02	145	291
Blue collar	12	05	06	01	16	10	01	02	141	545
Housewife or never worked	00	00	04	07	19	11	07	01	69	176
INCOME										
Less than $7,000	08	04	05	02	20	12	04	01	176	800
$7,000 - 9,999	11	10	08	05	15	15	02	06	154	256
$10,000 - 14,999	15	16	09	04	12	18	06	02	142	177
$15,000 and over	25	13	05	07	14	17	08	00	95	54
RESIDENCE										
5 years or less	15	10	06	03	15	13	04	02	229	248
More than 5 years	12	07	06	03	17	14	05	02	345	1037

Cases with missing data on the demographic variables omitted.

Within each city and within each attribute-category, percentages sum to 100% minus no response and non-participation.

TABLE III-6

Percentage of Television Lesson Viewing by Sex, Age, Education, Occupation, Income and Length of Residence

	Subject Matter									
	Vocational		Arts, Crafts, Household Skills		Liberal Arts		Miscellaneous		N	
	SM	F	SM	F	SM	F	SM	F	SM	F
SEX										
Male	03	01	05	02	09	09	03	02	227	469
Female	02	01	11	04	18	20	03	03	348	825
AGE										
18 - 39	02	00	05	04	18	19	02	02	195	521
40 - 59	02	00	12	03	16	17	03	02	239	475
60 and over	01	00	07	01	07	09	04	04	140	296
EDUCATION										
Less than high school	00	00	07	03	07	12	03	04	110	518
High school graduate	01	00	09	04	13	16	04	01	159	301
Some college	02	00	09	02	16	17	03	00	203	309
College graduate	03	02	10	00	18	25	00	03	100	154
OCCUPATION										
Professional, managerial	05	02	07	00	14	20	04	02	193	264
White collar	00	00	06	04	15	19	03	01	145	291
Blue collar	00	00	10	02	16	12	01	03	141	545
Housewife or never worked	00	01	15	05	09	17	04	02	69	176
INCOME										
Less than $7,000	01	00	09	03	12	12	03	03	176	800
$7,000 - 9,999	00	00	10	01	16	20	02	02	154	256
$10,000 - 14,999	04	02	06	02	16	24	03	02	142	177
$15,000 and over	02	02	08	02	11	21	02	02	95	54
RESIDENCE										
5 years or less	02	01	07	03	15	15	02	03	229	248
More than 5 years	02	00	09	03	13	16	04	02	345	1037

Cases with missing data on the demographic variables omitted.
Within each city and within each attribute-category, percentages sum to 100% minus no response and non-participation.

of the population subgroup that chooses to take advantage of the information-gathering opportunity, since education does not predict exposure to any other television lesson content.

Demographic Correlates of Participation in On-the-job Training

As would be expected, the reported content of on-the-job training is almost wholly vocational. Even the exceptional responses coded in other content categories probably represent vocational applications of liberal arts courses at higher educational or occupational levels.

Men are twice as likely as women to report such training during the past five years. Much more than half the respondents reporting on-the-job training were under 40, but a certain number of respondents in their sixties also reported receiving this training. Participants are more likely than not to be relative newcomers to the community, a finding that makes sense in terms of career patterns (See Table III-7).

In both cities there is an interesting departure from a linear relationship between education and on-the-job training participation. Participation increases with education until it reaches its peak among those who have some college background but are not college graduates. Among college graduates participation is as low as, or lower than, participation among high school graduates. If college graduates receive on-the-job training in proportion to their other participation in adult education, then they must have other names for it (e.g. "management apprenticeship").

In San Mateo blue collar participation in on-the-job training is actually higher than white-collar participation, while in Fresno the reverse is true. This is the pattern that vocational evening class attendance was found to fit. Perhaps these differences are attributable to the

TABLE III-7

Percentage of On-the-job Training Participation by Sex, Age, Education, Occupation, Income and Length of Residence

	Subject Matter									
	Vocational		Arts, Crafts, Household Skills		Liberal Arts		Miscellaneous		N	
	SM	F	SM	F	SM	F	SM	F	SM	F
SEX										
Male	46	37	00	01	00	00	04	01	227	469
Female	22	20	01	00	01	01	01	01	348	825
AGE										
18 - 39	49	40	00	00	01	00	04	02	195	521
40 - 59	29	24	00	00	00	00	01	00	239	475
60 and over	10	05	00	00	00	00	01	01	140	296
EDUCATION										
Less than high school	20	15	00	00	00	00	00	01	110	518
High school graduate	32	34	00	00	00	00	01	01	159	301
Some college	38	37	00	00	00	00	04	00	203	309
College graduate	32	27	02	01	00	02	00	01	100	154
OCCUPATION										
Professional, managerial	38	31	00	00	00	01	03	02	193	264
White collar	34	35	00	00	00	00	03	00	145	291
Blue collar	41	27	00	00	00	00	02	01	141	545
Housewife or never worked	01	02	01	00	01	00	00	00	69	176
INCOME										
Less than $7,000	37	21	00	00	00	00	01	01	176	800
$7,000 - 9,999	32	32	00	00	01	00	04	01	154	256
$10,000 - 14,999	31	42	00	00	00	01	01	00	142	177
$15,000 and over	25	13	00	00	00	00	03	00	95	54
RESIDENCE										
5 years or less	36	40	00	00	00	00	03	03	229	248
More than 5 years	29	23	00	00	00	00	02	00	345	1037

Cases with missing data on the demographic variables omitted.
Within each city and within each attribute-category, percentages sum to 100% minus no response and non-participation.

relative need in San Mateo for blue collar workers in possession of new skills and in Fresno for white collar workers with the same qualifications.

Demographic Correlates of the Use of a Private Teacher

Women are the chief users of private teachers, and they make use of these personal sources of information and instruction to study arts, crafts, and household skills. In both cities the proportion of use is highest among college graduates, but the occupational level of highest use is the white collar group, perhaps because the managerial and professional group -- whose status is congruent with that of college graduates -- are too busy for such activity (See Table III-8).

Use of private teachers also increases with income, a finding that may reflect on the fact that such lessons have to be paid for.

Demographic Correlates of Self-Study Activity.

The value of self-study in occupational and social advancement is an American truism. Even if, as London and Wenkert (1964) assert, the blue collar worker feels out of place in the white collar world of adult evening classes, the potential of self-study is completely open to him. Nor are lack of education and low income convincing handicaps, given the variety of simply written, inexpensive self-instructional materials.

If all subgroups of the population accepted the principle of continuing education, and if such subgroups as the poorly educated preferred not to attend evening classes, lectures, and group discussions for this purpose, then we might expect such subgroups to participate disproportionately in self-study, the one learning activity that each person can structure to please himself.

TABLE III-8

Percentage of Private Lesson Participation by Sex, Age, Education, Occupation, Income and Length of Residence

	Subject Matter									
	Vocational		Arts, Crafts, Household Skills		Liberal Arts		Miscellaneous		N	
	SM	F	SM	F	SM	F	SM	F	SM	F
SEX										
Male	02	02	06	03	00	00	01	01	227	469
Female	02	01	12	04	03	01	01	00	348	825
AGE										
18 - 39	03	00	09	04	02	00	03	00	195	521
40 - 59	02	02	14	03	01	00	00	00	239	475
60 and over	00	00	04	01	01	00	00	00	140	296
EDUCATION										
Less than high school	00	00	03	00	00	00	00	00	110	518
High school graduate	02	00	08	02	00	00	01	00	159	301
Some college	01	01	12	07	02	00	01	00	203	309
College graduate	05	00	13	08	00	00	00	01	100	154
OCCUPATION										
Professional, managerial	03	00	10	05	01	01	01	00	193	264
White collar	01	01	14	06	00	00	02	00	145	291
Blue collar	02	00	05	01	01	00	00	00	141	545
Housewife or never worked	01	01	07	03	05	00	01	00	69	176
INCOME										
Less than $7,000	02	00	06	01	01	00	00	00	176	800
$7,000 - 9,999	03	03	08	04	01	01	02	00	154	256
$10,000 - 14,999	00	02	11	08	01	00	01	01	142	177
$15,000 and over	02	00	13	07	02	02	00	00	95	54
RESIDENCE										
5 years or less	03	02	07	04	00	00	02	00	229	248
More than 5 years	00	00	10	03	01	00	00	00	345	1037

Cases with missing data on the demographic variables omitted.
Within each city and within each attribute-category, percentages sum to 100% minus no response and non-participation.

The data show, unfortunately, that those who already utilize other modes of continuing education also engage in self-study. Those who are underrepresented in other activities are also underrepresented in this activity. Except for a higher overall level, the pattern of reported self-study is remarkably similar to the pattern of evening class attendance, mirroring even the curvilinear relationships with education, occupation, and income with vocational study. The trends with occupation and income in the area of liberal arts are within chance limits, however. The percentages are so parallel that we might suspect respondents attending evening classes of crediting themselves automatically with self-study for following course readings (See Table III-9)

The Interaction of Sex, Age, and Education in Predicting Participation in Adult Education

The foregoing tables have shown that sex, age, and education are among the most stable correlates of adult education participation. Table III-10 shows percentage of participation in each form of adult education by sex, age, and education taken together. This allows a more precise characterization of the population subgroups proportionately strongest in each activity.

To take the simplest case first, enrollment in correspondence courses is very much a younger man's information-seeking strategy. The amount of education he has had is not much of a factor. Older men and younger women with more than high school education also take correspondence courses in some strength, but less frequently than the younger men.

Another simple pattern is evident in lecture attendance. The four subgroups with more than high school education report high attendance; those with less than high school education report low attendance. Neither sex nor age is of particular help in qualifying this pattern.

TABLE III-9

Percentage of Self-Study Activity by Sex, Age, Education, Occupation, Income and Length of Residence

	Subject Matter									
	Vocational		Arts, Crafts, Household Skills		Liberal Arts		Miscellaneous		N	
	SM	F	SM	F	SM	F	SM	F	SM	F
SEX										
Male	39	23	07	06	10	12	05	03	227	469
Female	12	08	15	09	12	12	03	03	348	825
AGE										
18 - 39	29	17	14	07	15	11	04	03	195	521
40 - 59	25	15	13	10	06	10	05	03	239	475
60 and over	11	04	09	07	12	12	02	03	140	296
EDUCATION										
Less than high school	10	07	09	06	09	07	02	03	110	518
High school graduate	20	15	12	06	08	07	04	01	159	301
Some college	28	20	13	11	12	14	04	04	203	309
College graduate	29	19	14	11	13	24	06	05	100	154
OCCUPATION										
Professional, managerial	36	20	11	09	10	19	05	06	193	264
White collar	16	17	14	06	10	10	04	02	145	291
Blue collar	23	11	11	08	12	11	04	02	141	545
Housewife or never worked	06	04	10	08	13	09	01	02	69	176
INCOME										
Less than $7,000	18	09	15	06	13	12	02	03	176	800
$7,000 - 9,999	22	19	06	10	12	10	06	03	154	256
$10,000 - 14,999	29	22	15	09	10	11	04	04	142	177
$15,000 and over	26	19	12	11	07	23	04	00	95	54
RESIDENCE										
5 years or less	24	16	11	08	11	12	04	05	229	248
More than 5 years	22	12	12	07	10	11	04	03	345	1037

Cases with missing data on the demographic variables omitted.

Within each city and within each attribute-category, percentages sum to 100% minus no response and non-participation.

TABLE III-10

Percentage Participating in Adult Education Activities by Sex, Age, and Education

Sex	Age	Education	Evening Class		Lectures		Correspon Courses		Group Discuss		TV Lessons		On-Job Training		Private Teacher		Self-Study		N	
			SM	F	SM	F	SM	F	SM	F	SM	F	SM	F	SM	F	SM	F	SM	F
Male	under 40	High school or less	56	30	30	24	26	16	52	28	11	13	63	51	00	04	74	38	27	80
		More than high school	61	55	73	56	33	20	49	41	20	17	80	56	16	07	86	56	49	116
	40 or over	High school or less	16	14	33	16	06	04	33	17	19	09	36	30	07	03	37	29	67	183
		More than high school	39	35	60	61	06	13	52	44	21	21	42	31	11	11	61	65	85	85
Female	under 40	High school or less	31	25	43	19	02	04	33	25	24	36	35	33	14	05	41	26	51	210
		More than high school	44	59	60	48	09	09	54	35	43	33	49	41	24	14	51	50	68	113
	40 or over	High school or less	15	18	32	18	00	03	28	17	27	21	14	09	10	02	29	25	123	345
		More than high school	43	34	67	53	04	04	40	41	44	29	18	19	27	11	53	45	101	150

Evening classes and group discussions follow a single pattern. Younger men are quite likely to participate. College training increases evening class attendance. Among the older men and both age groups of women, higher education seems to be necessary to stimulate participation.

It was noted earlier that women form the core of television lesson viewers. Controls on age and education now show that education is the contingent variable for high participation in both age groups of women. Education plays a similar role in the weaker trends of television lesson viewing among men.

There are at least four distinct levels of participation in on-the-job training. Younger men are the most active, with higher education accounting for even greater activity among them. Next are the older men and the younger women with some college education. Third are older men and younger women with only high school education. Lastly, older women are very unlikely to have received on-the-job training, whatever their educational background.

Sex accounts for the greatest difference in the use of a private teacher, as the earlier table also indicated. Age does not relate systematically to the trends, but within each sex subgroup higher education predicts greater use.

The reporting of self-study is most strongly related to education. However, age makes some difference; younger men are more likely to report self-study regardless of education. Sex also makes some difference; men are generally more likely than women to report this activity.

Participation in More than One Adult Education Activity

Table III-11 presents data on the extent to which participants in one adult education activity are likely to participate in another. Separate tabulations within the vocational, liberal arts, and arts, crafts, and household skills content areas show that, although lectures and self-study are highest in overall co-participation, highest co-participation in vocational coursework involves on-the-job training and self-study.

Those who study arts, crafts, and household skills by any mode are not particularly likely to study the same content in another mode also. The highest level of co-participation in this content area is only 1.4 per cent, involving lectures and self-study.

More than 6 per cent of the respondents reported receiving liberal arts information or instruction via lectures _and_ group discussions. There is in fact a cluster of modes for liberal arts co-participation: evening classes, lectures, group discussions, television lessons, and self-study.

Participation in Adult Education Activities and Attitude toward Previous Schooling

When sex, age, and education are controlled and attitude toward previous schooling is the predictor of adult education participation, there is no consistent influence of attitude on participation _regardless_ of mode. Tables III-12 and III-13, representing the two extremes of formality in adult education (evening classes and self-study), illustrate the general lack of association between attitude toward previous schooling and present participation. Respondents who were extremely fond of school were only slightly (and not universally) more likely to participate than those who liked school only somewhat or not at all. In fact, the numerous instances of trend reversal (i.e., greater participation by those who least liked school) would indicate that adult education is cognitively divorced from formal schooling _per se_ and is used by individuals to fill specific needs at specific times rather than as general enrichment. This conclusion supports the previous findings of Johnstone and Rivera (1965).

TABLE III-11

Percentage of Co-participation in Adult Education Activities (Fresno)[a]

		Evening Classes	Lectures	Correspon Classes	Group Discussions	TV Lessons	On-the-Job Training	Private Teacher	Self-Study
Lectures		15.4 3.5 0.8 3.1							
Correspondence Courses		3.5 1.8 0.2 0.5	3.0 1.2 0.2 0.4						
Group Discussions		12.4 2.8 0.5 3.1	17.2 3.9 1.0 6.3	2.8 1.2 0.1 0.5					
Television Lessons		8.3 0.1 0.2 2.5	9.7 0.1 0.4 3.7	1.2 0.1 0.0 0.3	7.6 0.1 0.1 2.9				
On-the-Job Training		11.4 6.2 0.2 0.2	12.4 5.5 0.2 0.1	3.9 2.8 0.0 0.0	11.8 4.9 0.1 0.2	6.5 0.5 0.2 0.1			
Private Teacher		2.9 0.5 0.5 0.2	3.0 0.2 0.2 0.2	0.5 0.1 0.0 0.0	3.1 0.2 0.2 0.3	1.4 0.0 0.0 0.3	2.1 0.7 0.0 0.0		
Self-Study		16.4 4.6 1.3 2.9	18.2 4.3 1.4 3.5	4.6 1.9 0.4 0.5	16.2 3.7 0.7 4.0	11.0 0.2 0.7 3.2	14.8 7.6 0.1 0.1	3.4 0.5 0.9 0.3	
Overall	Vocational	13.3	8.7	4.0	7.5	0.9	26.0	1.2	13.4
	Arts, Crafts	5.9	5.0	0.9	3.3	2.9	0.7	3.5	7.9
	Liberal Arts	8.3	15.5	1.3	14.3	16.4	0.4	0.7	11.7

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[a] From top to bottom, figures in each cell are total co-participation; vocational co-participation; arts, crafts, and household skills co-participation; and liberal arts co-participation (including religion and civic affairs). Total responses = 1294.

TABLE III-12

Percentage Participating in
Evening Classes by General Evaluation of
School, Holding Sex, Age, and Education Constant.

			RESPONDENT LIKED SCHOOL		
Sex	Age	Education	EXTREMELY	QUITE A BIT	SOMEWHAT OR NOT AT ALL
Male	under 40	High School or less	36 (11)	34 (32)	24 (29)
		More than High School	53 (36)	57 (47)	59 (29)
	40 or over	High School or less	9 (45)	11 (54)	24 (54)
		More than High School	45 (33)	34 (32)	24 (17)
Female	under 40	High School or less	44 (43)	23 (79)	18 (68)
		More than High School	67 (42)	53 (47)	15 (19)
	40 or over	High School or less	26 (113)	16 (126)	25 (73)
		More than High School	42 (71)	29 (56)	100 (20)

TABLE III-13

Percentage Participating in Self Study by General Evaluation of School, Holding Sex, Age, and Education Constant

			RESPONDENT LIKED SCHOOL		
Sex	Age	Education	EXTREMELY	QUITE A BIT	SOMEWHAT OR NOT AT ALL
Male	under 40	High School or less	27 (11)	38 (32)	41 (29)
		More than High School	61 (36)	49 (47)	62 (29)
	40 or over	High School or less	31 (45)	30 (54)	31 (54)
		More than High School	67 (33)	66 (32)	59 (17)
Female	under 40	High School or less	35 (43)	29 (79)	19 (68)
		More than High School	50 (42)	49 (47)	47 (19)
	40 or over	High School or less	36 (113)	18 (126)	22 (73)
		More than High School	56 (71)	32 (56)	50 (20)

2. Use of the Mass Media for Information-Seeking

Mass media consumption is an integral part of information-seeking behavior. The data that follow are demographic breakdowns of use patterns and content preferences in five mass media -- television, radio, newspapers, magazines and books. Adult-information seeking in each medium will be discussed in relation to the demographic variables of sex, age, education, occupation, income, and length of residence in the community.

Gross media use patterns

When high and low use patterns in one medium are combined with the same dichotomies in other media, the media use matrix indicates that there is no relationship among these media use patterns (See Table III-14). Adults who are heavy magazine consumers, for example, are just as likely to be high or low users of other media. In no case do the cell percentages deviate significantly from chance. The inability of one medium to predict the use of another indicates the necessity of separate consideration of each through demographic breakdowns of possible predictor variables.

Demographic correlates of TV use

The television set has assumed the status of a necessity in this generation; its presence and use are unquestioned by even the tiniest toddler. However, position in the life-cycle, degree of social-family responsibilities, and socio-economic status do qualify the kinds of use made by different individuals. The data presented on TV use are from San Mateo only (See Table III-15).

TABLE III-14

Percentage of Respondents High and Low in Joint Media Use

		Monthly Books		Daily Radio		Daily Television		Weekly Magazines		Overall
		Low	High	Low	High	Low	High	Low	High	
		%	%	%	%	%	%	%	%	
Daily Radio	Low	22	18							40
	High	30	29							59
Daily Television	Low	25	25	21	29					50
	High	28	22	20	30					50
Weekly Magazines	Low	42	31	32	41	38	36			73
	High	11	16	9	18	13	14			27
Daily Newspapers	Low	30	22	23	30	27	26	42	10	53
	High	23	24	17	30	23	24	31	16	47
Overall		53	47	41	59	50	50	73	27	

Criteria of high use:

Daily Newspapers	2 or more
Weekly Magazines	4 or more
Daily Television	2 hours or more
Daily Radio	1/2 hr. or more
Monthly Books	1 or more

Total responses = 575

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TABLE III-15

Percentage of Television Use by Sex, Age, Education, Occupation, Income and Length of Residence

	Extent of Use	Content Type		N
	1 1/2 hours daily or more	Entertainment	Information	
	SM	SM	SM	SM
SEX				
Male	47	65	23	227
Female	51	68	23	348
AGE				
18 - 39	52	74	17	195
40 - 59	44	64	26	239
60 and over	56	59	27	140
EDUCATION				
Less than high school	60	75	18	110
High school graduate	53	66	24	159
Some college	47	65	23	203
College graduate	39	63	28	100
OCCUPATION				
Professional, managerial	46	62	30	193
White collar	47	73	19	145
Blue collar	47	68	20	141
Housewife or never worked	62	68	17	69
INCOME				
Less than $7,000	53	66	26	176
$7,000 - 9,999	50	74	14	154
$10,000 - 14,999	55	66	27	142
$15,000 and over	35	57	27	95
RESIDENCE				
5 years or less	53	66	26	229
More than 5 years	48	66	20	345

Cases with missing data on the demographic variables omitted.
Within each attribute-category, percentages sum to 100% minus no response.

With sex, age, and education as simultaneous indicators of time spent with TV, the data show that sex differences appear only for the younger, less educated group (see Table III-16). Women under 40 with only a high school education or less watch more TV than men of the same group. There is a slight decrease in volume of TV viewing with age for women at the high school level. Education is perhaps the most potent determinant of TV viewing. College-educated adults consistently watch less TV than their less educated peers.

When education is held constant, difference in TV use is found at different occupational levels except that adults not employed watch more TV than those who work. Higher income respondents are more frequently found in the lower TV use categories. This is particularly marked in the over $15,000 income group in which 64 per cent are found to use TV less than one and a half hours daily, compared with fewer than 50 per cent in the lower income groups. When education is held constant the relationship between income and TV time is strongly negative in the low education group and slightly positive in the high education group (despite the influence of the over $15,000 group in the opposite direction).

In gross percentage of time spent, TV appears to be synonymous with entertainment rather than information (Table III-17). Informational use is generally higher among older people; sex and education have no consistent relationship to informational use.

While occupational levels appear to have no general effect on time spent with TV, there is a clear dichotomy in informational use between adults in professional-managerial positions and those at other occupational levels. Here, again, are most likely to be found men in general and older

TABLE III-16

Percentage of Daily Time Spent Watching TV By Sex, Age, Education

	Men				Women				
	Under 40		40 or Over		Under 40		40 or Over		
	H.S. or Less	College	H.S. or Less	College	H.S. or Less	College	H.S. or Less	College	
Less than 1 1/2 hrs. daily	48	59	49	54	31	54	45	55	
1 1/2 hrs. or more daily	52	41	51	46	69	46	55	45	
N =	27	49	67	85	51	68	123	101	Total N = 575

Note: Miscellaneous and no response omitted

TABLE III-17

Percentage Viewing Information and Entertainment Television Content by Sex, Age, and Education[a]

	Men				Women			
	Under 40		40 or Over		Under 40		40 or Over	
	H.S. or Less	College	H.S. or Less	College	H.S. or Less	College	H.S. or Less	College
Information	17	22	28	24	20	20	22	30
Entertainment	83	78	72	76	80	80	78	70
N =	91	160	232	305	190	261	446	326

[a] Information includes news, public affairs, and direct education programs; entertainment includes drama, sports, daytime serials, variety shows, situation comedies and quiz-panel programs. Respondents were asked to name specific TV programs recently seen and frequencies were summed over all responses to compute percentages. No response and uncodable response were omitted.

women. Information-seeking in TV is more intensive as income increases. The probable interaction of age, sex, education, occupation and income would place better educated and/or older men and older women in professional-managerial positions at high income levels. These are the individuals most likely to spend the least amount of time with the TV set and to use it for information rather than entertainment.

The longer the residence, the less use is made of TV, undoubtedly because of social contacts and organizational memberships facilitated by continuous living in the same community. Length of residence has little effect on TV content preferences, since the proportion of informational content preferences is only slightly higher with a shorter length of residence.

Demographic correlates of radio use

The relationships between radio use and demographic variables are presented in Table III-18. Radio consumption declines with age. Education adds little to descriptions of radio use. College graduates spend as much time with radio as do adults with less than a high school education.

When the same demographic variables are used to predict radio content preferences, the data from San Mateo and Fresno show no critical sex differences. Informational radio use increases with age while the general consumption level declines, as noted above. Educational background has little influence on radio content preferences; the data do not support any relationship between education and informational use of radio.

Since no relationship was found between education and either radio time or content preferences, no attempt was made in the analysis to partial out education when assessing the influence of occupation and income.

TABLE III-18

Percentage of Radio Use by Sex, Age, Education, Occupation, Income and Length of Residence

	Extent of Use	Content Type*				N	
	1 hour or more daily	Entertainment		Information			
	SM	SM	F	SM	F	SM	F
SEX							
Male	26	41	39	38	48	227	469
Female	30	42	35	28	42	348	825
AGE							
18 - 39	34	57	49	21	32	195	521
40 - 59	30	40	30	33	51	239	475
60 and over	18	20	20	46	53	140	296
EDUCATION							
Less than high school	27	34	31	35	45	110	518
High school graduate	30	40	40	33	37	159	301
Some college	29	47	37	26	43	203	309
College graduate	29	41	33	36	55	100	154
OCCUPATION							
Professional, managerial	21	36	31	37	50	193	264
White collar	36	50	38	26	38	145	291
Blue collar	28	43	36	33	44	141	545
Housewife or never worked	31	34	33	31	45	69	176
INCOME							
Less than $7,000	26	37	34	33	44	176	800
$7,000 - 9,999	32	48	41	31	40	154	256
$10,000 - 14,999	26	43	38	29	46	142	177
$15,000 and over	28	33	22	35	56	95	54
RESIDENCE							
5 years or less	27	44	43	26	34	229	248
More than 5 years	30	39	32	35	46	345	1037

Cases with missing data on the demographic variables omitted.
Within each city and within each attribute-category, percentages sum to 100% minus no response.

* San Mateo and Fresno classifications equivalent but not identical.

The data in Table III-18 show no trends for occupation or income. White collar workers with yearly incomes of $7,000-9,999 are the largest radio consumers; they also show the greatest preference for entertainment. The criteria for informational use appear to be a professional-managerial position with an annual salary in excess of $15,000. The combined influences of occupation and income do not seem to create demands on radio time but show that entertainment is displaced when radio time is curtailed at the higher occupational and income levels. However, there is a sufficiently large no response exclusion in the percentages to warrant the contention that differences are operating at a chance level. Length of residence has no effect on the amount of radio consumption, but residential longevity is clearly related to a decrease in entertainment and a corresponding increase in preference for information.

Demographic correlates of newspaper use

The relationships between newspaper use and demographic variables are presented in Table III-19. When a three-way control on the independent variables of sex, age, and education is introduced, no sex differences are found in Fresno; San Mateo men read more than their female counterparts (Table not shown). These sex differences reflect occupational levels whose influence on newspaper reading is discussed below. Newspaper volume increases a small amount with age and is greater with a college education when age is held constant. Only sex influences the reading of different newspaper sections; men read more news and women read more material designed specifically for them.

TABLE III-19

Percentage of Newspaper Use by Sex, Age, Education, Occupation, Income and Length of Residence

	Extent of Use						N	
	None		One Daily		2 or more Daily			
	SM	F	SM	F	SM	F	SM	F
SEX								
Male	6	6	38	49	56	45	227	469
Female	12	7	47	46	41	47	348	825
AGE								
18 - 39	15	7	46	49	39	45	195	521
40 - 59	7	4	41	46	52	49	239	475
60 and over	6	11	42	46	52	42	140	296
EDUCATION								
Less than high school	13	11	46	52	41	37	110	518
High school graduate	9	6	47	49	44	45	159	301
Some college	9	3	41	41	49	56	203	309
College graduate	6	3	38	39	56	58	100	154
OCCUPATION								
Professional, managerial	6	3	38	42	56	54	193	264
White collar	10	4	43	47	47	48	145	291
Blue collar	12	9	48	52	40	38	141	545
Housewife or never worked	13	10	46	39	41	51	69	176
INCOME								
Less than $7,000	11	9	53	52	36	38	176	800
$7,000 - 9,999	16	4	41	39	43	57	154	256
$10,000 - 14,999	6	2	44	41	51	56	142	177
$15,000 and over	3	0	29	35	67	65	95	54
RESIDENCE								
5 years or less	10	9	50	48	40	41	229	248
More than 5 years	9	6	39	47	51	46	345	1037

Cases with missing data on the demographic variables omitted.
Within each city and within each attribute-category, percentages sum to 100% minus no response.

When education is controlled, occupation has a direct relation to newspaper consumption. Volume of newspaper reading increases with occupational status, indicating that occupations create informational demands independent of educational level.

Those not employed have differential newspaper consumption. A breakdown of occupational data showed that an average 95 per cent of those not working were women; an average 66 per cent of these women had a high school education only. The motivations for newspaper reading of these women appear to be directly influenced by educational level; consumption is higher at the college level than at the high school level.

Differences in occupational levels in San Mateo and Fresno mark different income criteria for influence on newspaper reading. Professional-managerial occupations make up 34 per cent of the total in San Mateo and 20 per cent in Fresno; blue collar jobs comprise 26 per cent and 42 per cent in these communities, respectively. The $7,000 level in Fresno and the $10,000 level in San Mateo are the criteria for a change in newspaper volume with education controlled. Above these levels, consumption noticeably shifts from none or one newspaper daily to two or more; below these levels, consumption differences are not marked.

Demographic correlates of magazine use

The relationships between magazine use and demographic variables are presented in Table III-20. When sex, age, and education are combined as indicators of magazine consumption, the data do not support any consistent sex or age differences. Volume increases with age for college-educated men but the increase is more likely related to occupation than to age. Over all cases, there is a much greater magazine consumption rate for adults with college training than for those with only a high school education or less.

Both occupation and income influence magazine reading. When education is controlled, the data indicate a steady increase in magazine volume with increases in occupational status and income level. Those not employed show the direct influence of education.

The large percentage differences between San Mateo and Fresno in the content breakdowns from Table III-20 reflect differences in questions asked in the two communities. In San Mateo, respondents named magazines recently read, but in Fresno respondents were asked to indicate those magazines read for specific information.

Women are greater magazine information users than men. Informational use is not affected by age, except for generally lower interest in the older age group, and it increases with education. A breakdown of magazine categories by sex, age and education in San Mateo shows that younger women, highest consumers of information in magazines, are differentiated by educational level; those at the high school level are interested in personal and home materials while those with college experience are only slightly lower in their news consumption than their male peers. Younger, high school educated men are most interested in sports and tend to look at women's or home information as well. College men are most interested in news, and only 10 to 15 per cent read magazines specifically oriented toward business and professional materials (See Table III-21).

The trends in demographic influence hold for both communities. When sex, age and education were used in Fresno as simultaneous predictors of

TABLE III-20

Percentage of Magazine Use by Sex, Age, Education Occupation, Income and Length of Residence

	Extent of Use						Content Type				N	
	None		1 to 3 Weekly		4 or more Weekly		Entertainment		Information			
	SM	F	SM	F	SM	F	SM	F	SM	F	SM	F
SEX												
Male	16	25	56	51	28	24	36	12	48	6	227	469
Female	19	24	56	45	26	31	28	18	52	26	348	825
AGE												
18 - 39	16	23	57	52	27	24	26	8	57	25	195	521
40 - 59	18	20	56	47	26	31	30	11	52	25	239	475
60 and over	19	35	54	39	28	24	41	5	39	18	140	296
EDUCATION												
Less than high school	32	37	55	47	13	15	32	6	35	18	110	518
High school graduate	14	21	58	51	27	27	36	10	48	23	159	301
Some college	17	12	55	52	28	35	28	10	55	27	203	309
College graduate	09	09	52	33	39	56	30	9	61	35	100	154
OCCUPATION												
Professional, managerial	12	16	54	41	33	43	29	11	58	30	193	264
White collar	17	16	58	48	25	36	30	9	53	25	145	291
Blue collar	26	32	57	50	16	18	38	8	35	18	141	545
Housewife or never worked	19	24	51	48	30	28	25	6	54	24	69	176
INCOME												
Less than $7,000	23	30	55	48	22	21	30	6	47	19	176	800
$7,000 - 9,999	17	18	62	45	21	36	34	13	48	25	154	256
$10,000 - 14,999	13	10	57	51	30	38	31	9	55	36	142	177
$15,000 and over	18	13	42	32	40	57	27	15	55	31	95	54
RESIDENCE												
5 years or less	15	24	55	49	29	26	30	8	55	25	229	248
More than 5 years	20	24	55	47	25	27	32	9	48	23	345	1037

Cases with missing data on the demographic variables omitted.
Within each city and within each attribute-category, percentages sum to 100% minus no response

TABLE III-21

Percentage of Respondents Indicating Various Magazine Content Interests by Sex, Age, Education

	Men				Women			
	Under 40		40 and Over		Under 40		40 and Over	
	H.S. or Less	College	H.S. or Less	College	H.S. or Less	College	H.S. or Less	College
Women's & Home	15	6	6	5	31	24	23	25
Business-Profession	4	14	4	11	2	3	0	4
News	19	41	22	39	18	34	22	23
Sports, Hobbies, Travel	26	12	13	11	8	7	7	9
Other, including General Reading	23	20	26	23	16	13	30	24
N =	27	49	67	85	51	68	123	101

San Mateo only

Note: No response omitted

TABLE III-22

Percentage of Informational Use of Magazines by Sex, Age, Education

	Men				Women			
	Under 40		40 and Over		Under 40		40 and Over	
	H.S. or Less	College	H.S. or Less	College	H.S. or Less	College	H.S. or Less	College
Entertainment	10	14	11	14	6	6	7	7
Information	12	27	12	22	24	33	23	33
Mag. Not Used to Seek Specific Information	77	59	77	64	70	61	70	61
N =	80	116	183	85	210	113	345	150

Fresno only

Note: No response omitted

specific information use in magazines, women are the prime information-seekers; age has no effect for either men or women. A college education doubles information use for men and increases women's specific information-seeking in magazines by almost 50 per cent (See Table III-22).

Informational use of magazines is lowest at the blue collar occupational level. The relative equivalence in informational use of those not employed and employees at the higher occupational levels becomes clear when the different interests of men and women are reviewed. It is also apparent from the percentage of occupationally-related information use that occupations per se contribute a small but discriminating proportion to the increase in volume associated with them. Informational use of magazines also increases with income, and $10,000 appears to be the predictive criterion.

Length of residence has no apparent effect on magazine consumption nor on informational use.

Demographic correlates of book use

The data regarding book consumption show, first, that women read more books than men but that they read fiction while men devote more of their reading time to non-fiction. There is a trend toward a decrease in the number of books read with age; younger adults read more fiction than older adults. Both fiction and non-fiction volume increase with higher education (See Table III-23).

Differences in the character of San Mateo and Fresno as communities qua communities are emphasized in the area of book reading. For example, 45 per cent of the San Mateo respondents had read a book within the past month while only 28 per cent of the Fresno respondents had done so. There are

TABLE III-23

Percentage of Book Use by Sex, Age, Education, Occupation, Income and Length of Residence

	Extent of Use 1 or more Monthly		Content Type Fiction		Non-fiction		N	
	SM	F	SM	F	SM	F	SM	F
SEX								
Male	43	31	19	12	23	19	227	469
Female	49	37	30	20	17	16	348	825
AGE								
18 - 39	47	42	27	23	20	16	195	521
40 - 59	47	30	25	15	19	15	239	475
60 and over	44	31	23	10	18	29	140	296
EDUCATION								
Less than high school	32	21	18	06	12	12	110	518
High school graduate	38	34	25	20	11	13	159	301
Some college	53	49	29	28	21	21	203	309
College graduate	63	60	27	30	34	27	100	154
OCCUPATION								
Professional, managerial	53	49	23	26	36	26	193	264
White collar	47	43	32	24	14	14	145	291
Blue collar	39	27	22	10	15	14	141	545
Housewife or never worked	50	28	32	15	16	11	69	176
INCOME								
Less than $7,000	46	30	26	13	19	14	176	800
$7,000 - 9,999	42	38	21	22	15	16	154	256
$10,000 - 14,999	47	43	23	25	22	16	142	177
$15,000 and over	55	61	37	30	18	32	95	54
RESIDENCE								
5 years or less	50	38	28	19	19	18	229	248
More than 5 years	44	33	23	17	18	16	345	1037

Cases with missing data on the demographic variables omitted.

Within each city and within each attribute-category, percentages sum to 100% minus no response.

also approximately 50 per cent more college graduates in San Mateo than in Fresno, and the data indicate that the college graduate is at least 50 per cent more likely to have read a book monthly as is the adult with a high school education or less.

The data hint that differences in the influence of education on reading preferences in San Mateo and Fresno are due to differences in possible applications of non-fiction reading. Education and occupational level interact to show that adults at the high school level in professional-managerial positions read more non-fiction in Fresno (60 per cent) than in San Mateo (33 per cent). When the college level is reached, however, the shift in Fresno is toward fiction reading (53 per cent). The opposite trend obtains in San Mateo; 56 per cent of the college-trained employees at the professional managerial level read non-fiction. In Fresno, once a college education is attained, further intellectual stimulation appears to lie in fiction reading, while in San Mateo there are apparently sufficient outlets for information received in non-fiction reading to justify it at the higher occupational levels.

The relationship of education and income to reading preferences is complex. These variables interact in both San Mateo and Fresno such that a high school education with a higher income results in more fiction reading; fiction and nonfiction are almost evenly divided when the college level is reached at the higher incomes. Low education and low income in San Mateo predict more fiction reading than non-fiction (62 per cent) while the same combination in Fresno predicts higher non-fiction than fiction reading (63 per cent).

Community differences can be attributed to the types of occupations available to unskilled and semi-skilled workers. In San Mateo, these adults work largely in industrial positions; in Fresno they work largely in agriculture, and nonfiction reading implies religion more often than any other category. Gross percentage breakdowns show that the largest part of nonfiction reading in Fresno is done in the areas of religion, useful ("how to") materials and travel. These are areas of more interest to those at the lower socio-economic levels. The residual nonfiction includes biography, fine arts, philosophy and science, areas of greater interest to adults at higher socio-economic levels.

General book consumption is higher with shorter length of residence, perhaps indicating a displacement of available time to other pursuits with extended community exposure; the same effect can be seen in both fiction and nonfiction. Alternatively, it may indicate that more geographically mobile people are generally higher information processors.

With the triple index of sex, age and education, the San Mateo data show that at the high school level, younger men and older women are greater users of reference books; no sex differences appear at the college level. Use declines with age only for men at the lower educational levels. The sex and age differences seem to imply different reference interests for men and women, such that their respective traditional roles as breadwinner and homemaker dictate their reference use patterns. Reference book use increases with education, but the size of the increase depends on the sex and age group; men under 40 are least affected (6 per cent increase), while men over 40 show the greatest influence of education (30 per cent increase).

Data were also collected on specific types of reference books consulted. When sex, age, and education are investigated simultaneously,

TABLE III-24

Percentage Use of Types of Reference Books By Sex, Age and Education[a]

			General Information or Education, Including Religion		Business or Practical		Personal or Household Applied		N	
			SM	F	SM	F	SM	F	SM	F
Men	Under 40	H.S. or less	24	62	38	21	38	17	21	42
		College	23	58	36	35	41	7	44	68
	40 or over	H.S. or less	32	64	29	19	39	17	31	70
		College	30	68	33	28	37	4	79	53
Women	Under 40	H.S. or less	26	60	6	6	68	34	35	125
		College	29	62	7	8	64	30	66	80
	40 or over	H.S. or less	25	78	4	1	71	21	79	150
		College	32	72	8	4	60	23	98	90

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[a] Respondents were asked to name specific reference books used; less than 10 per cent in either community named more than two. Omitting "none," no response, and miscellaneous responses, frequencies were summed for two responses and percentages computed from these sums. Fresno = 52 per cent total response; San Mateo = 39 per cent total response.

definite patterns emerge. For example, men more frequently make use of business or practical information sources while women most often refer to household and personal guides. No consistent sex differences are evident in the area of general information/education (e.g. use of dictionaries, encyclopedias and religious materials). (See Table III-24).

General reference increases with age while areas of special interest to men and women remain relatively stable. Education has no real effect on type of reference book used, indicating the probable influence of family and community roles.

While in the discussion area of books, it is interesting to report the effects of sex, age and education on visits to the local library. The data show that college-educated women are more likely than men to have been to the library less than a year ago. In San Mateo, older men with less education had used the library more recently than women of the same age and education. When larger units of time were considered, sex differences tended to disappear. Use of the library declines with age, but there is less decline at the higher educational level (See Table III-25).

Men and women who have been to college are nearly twice as likely to have used the local library within the past year than others in the same age group who have less education. However, if the last reported library visit was over a year ago, the differences due to education disappear. The greater the recency of a reported library visit, the greater the influence of education. Conversely, men and women with a high school education or less are from two to eight times as likely to report "never" having been to their local library.

TABLE III-25

Percentage Reporting Last Visit to Public Library Within Past Month and in Previous Time Periods, by Sex, Age, and Education

			Within Past Month		More than Month, Less than Year		More than Year		Never		N	
			SM	F	SM	F	SM	F	SM	F	SM	F
Men	Under 40	H.S. or less	9	14	32	19	36	43	23	24	22	63
		College	33	29	16	30	43	34	8	7	42	109
	40 or Over	H.S. or less	25	5	21	11	27	36	27	48	48	132
		College	37	34	36	31	19	30	8	5	67	67
Women	Under 40	H.S. or less	22	4	27	22	37	41	14	23	41	174
		College	37	36	37	27	22	31	4	6	59	105
	40 or Over	H.S. or less	16	8	14	15	34	33	36	44	92	254
		College	46	29	23	27	24	33	7	1	87	119

"Don't know," no response omitted

"Practical education" from the mass media

Respondents in Fresno were asked what "readily available and practical education" they thought was provided by each mass medium. Seventy-three per cent were able to think of some relevant content in magazines, 71 per cent in newspapers, 67 per cent on television, and 43 per cent on radio. News itself is the content most often mentioned for newspapers and radio. Educational programs including documentaries are most often mentioned for television. News and practical "tools for daily living" make up the majority of educational magazine content. Subgroups of respondents differ only slightly in their perceptions of education content in the media.

Television. There are no consistent demographic patterns in perceiving news as television's "practical education" content (See Table III-26). The combined predictors of sex, age and education show women as only slightly greater users of "practical education" from television. This type of TV use increases with age for those who are less educated but decreases with age for the better educated. News, documentaries and other types of direct education programs are seen as useful more often than more "practical" information. Interest in news increases with education but declines with age. Interest in the documentaries and general education decreases with age for the better educated while it increases for the less educated, indicating the limitations of TV in the scope of educational materials available. Interest in "tools for daily living" increases only slightly with age.

Those in higher status occupations and those who are relatively new to the community mention television's subject-matter coverage, particularly in the form of educational programs and documentaries, as a form of

TABLE III-26

Percentage Reporting Various Types of Practical Education from Television - Fresno Only

	News	Subject Matter Education, Religion	Tools for Daily Living, General Info.	Misc.	N
SEX					
Male	17	26	10	9	469
Female	17	28	14	7	825
AGE					
18 - 39	17	31	11	4	521
40 - 59	16	27	12	7	475
60 and over	19	20	13	7	297
EDUCATION					
Less than high school	16	23	15	8	518
High school graduate	15	26	10	6	301
Some college	21	30	10	5	309
College graduate	17	39	9	1	155
OCCUPATION					
Professional, managerial	17	35	9	3	265
White collar	17	30	13	5	291
Blue collar	19	22	12	9	545
Housewife or never worked	13	27	15	6	176
INCOME					
Less than $7,000	18	25	13	6	800
$7,000 - 9,999	17	32	12	6	257
$10,000 - 14,999	18	33	7	5	177
$15,000 and over	9	30	13	4	54
RESIDENCE					
5 years or less	16	35	10	4	248
More than 5 years	18	26	12	9	1037

"No," no response, "Don't know," and responses referring to the quality of the medium omitted "practical education." These groups are below average in finding other educational value in television content. The specific information most frequently sought in television is news.

Radio. Data from San Mateo show the heavist users of radio are those under 40. However, more Fresno respondents over 40 were able to think of "practical education" programming on radio. Other demographic variables are not important predictors. From 45 to 74 per cent of the respondents indicate that radio has no practical education meaning for them. When used for information, radio usually means news (See Table III-27).

Newspapers. No demographic subgroup deviates more than four per cent from the overall average of 38 per cent mentioning news as the relevant content for newspaper contribution to practical education. When sex, age and education are used as predictors, no consistent demographic influences appear. Better educated women pay more attention to "tools for daily living" than do men, but they pay equal attention to news. Younger, better educated men and women cite news less often as practical education obtained from newspapers (See Table III-28).

Use of newspapers for coverage of specific subject matter topics more than triples from the lowest to the highest income levels; no occupational effects are noticeable.

Respondents use the newspaper specifically for news and advertising. It is also the medium most frequently cited as an information source.

Magazines. Men are more likely than women, and the better educated in both sexes are more likely to indicate that magazines provide practical education. News interest remains stable with age; educational interest

TABLE III-28

Percentage Reporting Various Types of Practical Education from Radio - Fresno Only

	News	Subject Matter Education, Religion	Tools for Daily Living, General Info.	Misc.	N
SEX					
Male	25	6	7	7	469
Female	17	8	9	7	825
AGE					
18 - 39	17	4	4	5	521
40 - 59	24	6	9	8	475
60 and over	18	10	12	6	297
EDUCATION					
Less than high school	20	7	10	7	518
High school graduate	17	3	7	4	301
Some college	22	7	8	7	309
College graduate	19	8	5	5	155
OCCUPATION					
Professional, managerial	22	7	7	5	265
White collar	17	3	7	6	291
Blue collar	22	7	8	6	545
Housewife or never worked	14	7	10	6	176
INCOME					
Less than $7,000	19	7	9	7	800
$7,000 - 9,999	18	6	8	4	257
$10,000 - 14,999	25	5	5	6	177
$15,000 and over	20	15	4	6	54
RESIDENCE					
5 years or less	19	4	5	9	248
More than 5 years	20	8	9	6	1037

"No," no response, "Don't know," and responses referring to the quality of the medium omitted.

TABLE III-28

Percentage Reporting Various Types of Practical Education from Newspapers - Fresno Only

	News	Subject Matter Education, Religion	Tools for Daily Living, General Info.	Misc.	N
SEX					
Male	38	6	16	7	469
Female	38	8	16	8	825
AGE					
18 - 39	37	8	16	6	521
40 - 59	41	6	16	8	475
60 and over	34	6	15	9	297
EDUCATION					
Less than high school	36	5	15	8	518
High school graduate	40	6	16	7	301
Some college	39	8	14	7	309
College graduate	35	11	18	6	155
OCCUPATION					
Professional, managerial	38	8	15	8	265
White collar	41	6	14	7	291
Blue collar	36	7	18	7	545
Housewife or never worked	37	6	14	7	176
INCOME					
Less than $7,000	37	5	15	8	800
$7,000 - 9,999	42	8	15	5	257
$10,000 - 14,999	36	7	18	8	177
$15,000 and over	37	17	18	8	54
RESIDENCE					
5 years or less	40	7	13	6	248
More than 5 years	38	7	17	8	1037

"No," no response, "Don't know," and responses referring to the quality of the medium omitted.

decreases with age for the less educated and increases slightly with age for the better educated. Women are far more interested in "tools for daily living" than men. Men also find magazines useful for sports, travel, hobbies and general entertainment (See Table III-29).

Previous data in this survey have shown education, occupation and income to be positively associated with magazine consumption. Perception of "practical education" in the subject-matter coverage of magazines is also positively related to these variables. The adult most interested in the educational value of magazines holds a professional-managerial position at a high income level; he is also the highest magazine consumer.

Respondents seek a wide variety of specific information in magazines. Men and women again display the influence of their roles by their respective interests in news and women's items. Interest in items of a general educational nature is shared.

The importance of perceiving "practical education" in media. Mass media may be particularly valuable in reaching segments of the population not reached by formal adult education or by the public library. If a media consumer is able to distinguish practical education content, then these consequences may be inferred: (1) the media will be included among the information sources he considers when he wants to learn something in the realm of practical education, and (2) at least some of the time he will use the criterion of educational value in choosing among media offerings.

Demographic correlates of perceived new media effects

UHF TV. Respondents in Fresno were asked about their perceptions of the effects of certain changes in new communication media. The four areas

TABLE III-29

Percentage Reporting Various Types of Practical Education from Magazines - Fresno Only

	News	Subject Matter Education, Religion	Tools for Daily Living, General Info.	Misc.	N
SEX					
Male	16	12	33	9	469
Female	12	8	43	7	825
AGE					
18 - 39	16	9	37	9	521
40 - 59	13	9	44	5	475
60 and over	11	9	33	6	297
EDUCATION					
Less than high school	9	7	36	6	518
High school graduate	16	5	43	8	301
Some college	18	11	40	7	309
College graduate	18	19	40	4	155
OCCUPATION					
Professional, managerial	17	15	39	6	265
White collar	17	7	47	7	291
Blue collar	11	8	36	8	545
Housewife, or never worked	12	7	34	5	176
INCOME					
Less than $7,000	11	8	38	7	800
$7,000 - 9,999	18	9	40	5	257
$10,000 - 14,999	18	12	44	8	177
$15,000 and over	24	9	37	10	54
RESIDENCE					
5 years or less	14	12	37	9	248
More than 5 years	14	9	40	6	1037

"No," no response, "Don't know," and responses referring to the quality of the medium omitted.

of inquiry were UHF TV, computers, teaching machines, and communication satellites. Respondents were asked to indicate whether they thought these "media" would effect changes for the better -- in increased education, information and/or efficiency of communication -- or for the worse.

Men and younger adults see more possibilities for improvement in education, information and communication efficiency with UHF TV. High school graduates and adults with college experience are more positive in their evaluations than adults with less than a high school background. Adults in professional, managerial and white collar positions see greater possibilities for increased information; adults with incomes of $15,000 and over are greatly impressed with UHF TV's potential for the improvement of education. Length of community residence is not influential in attitudes toward possible changes, and there are no striking demographic correlates of a negative attitude toward UHF TV (See Table III-30)

Computers. Men and college graduates see great promise in increased efficiency of communication with computers. Adults in professional-managerial positions with large incomes (likely to be college men) value highly this same aspect of computer technology. No demographic subgroup is overly impressed with computers' potential aid to education or information. Adults with greater length of community residency and those with lesser educations, lower status occupations and lower income levels are more likely to register a feeling that computers will effect a change for the worse. These lower occupation, income, or education respondents may feel somewhat alienated in a modern technological society and perceive computers as threatening to increase their alientation. (See Table III-31).

TABLE III-30

Percentage of Respondents Perceiving Changes Resulting from the Expansion of UHF TV

	Change for the worse	More or better Education	More or better Information	Inherent speed, efficiency, etc. of medium	N
SEX					
Male	3	10	19	7	469
Female	3	7	13	3	825
AGE					
18 - 39	3	9	18	7	521
40 - 59	3	9	16	4	475
60 and over	2	4	11	2	297
EDUCATION					
Less than high school	3	5	12	4	518
High school graduate	2	10	18	4	301
Some college	2	10	18	5	309
College graduate	4	9	16	6	155
OCCUPATION					
Professional, managerial	5	10	20	6	265
White collar	0	8	19	3	291
Blue collar	3	8	12	6	545
Housewife or never worked	2	5	13	2	176
INCOME					
Less than $7,000	2	6	13	5	800
$7,000 - 9,999	3	9	20	5	257
$10,000 - 14,999	3	10	21	5	177
$15,000 and over	2	21	19	2	54
RESIDENCE					
5 years or less	3	10	18	6	248
More than 5 years	3	8	15	4	1037

"No," no response, "Don't know," "No change," and miscellaneous responses omitted.

TABLE III-31

Percentage of Respondents Perceiving Changes Resulting from Computers

	Change for the worse	More or better Education	More or better Information	Inherent speed, efficiency, etc. of medium	N
SEX					
Male	11	5	4	25	469
Female	13	2	3	16	825
AGE					
18 - 39	10	4	3	21	521
40 - 59	14	1	4	22	475
60 and over	12	3	1	13	297
EDUCATION					
Less than high school	13	0	2	11	518
High school graduate	15	1	4	23	301
Some college	10	3	5	22	309
College graduate	9	8	5	35	155
OCCUPATION					
Professional, managerial	9	6	4	31	265
White collar	13	2	5	20	291
Blue collar	13	2	3	16	545
Housewife or never worked	12	3	2	12	176
INCOME					
Less than $7,000	12	2	2	15	800
$7,000 - 9,999	13	2	4	28	257
$10,000 - 14,999	11	3	7	23	177
$15,000 and over	9	6	2	33	54
RESIDENCE					
5 years or less	8	3	6	15	248
More than 5 years	13	3	4	20	1037

"No," no response, "Don't know," "No change," and miscellaneous responses omitted.

Teaching Machines. Educational level is highly related to perceived benefit from teaching machines in education and communication efficiency; college graduates are three to four times as likely to register positive attitudes as adults with less than a high school education. Younger adults (i.e., those who had very young children or children still in school) are more positive about educational improvement than older adults. This same positive attitude is also associated more strongly with white collar and professional-managerial occupational levels, and with higher incomes (although less strongly). Newcomers to the community are more positive about educational improvement than are residents of longer duration. Perceptions of changes for the worse are consistently at about the 10 per cent level, with adults at the highest income levels the least pessimistic (See Table III-32).

Communication Satellites. Men and younger adults are again the most positive in their attitudes toward communication satellites. They perceive positive gain from these satellites in information, communication efficiency, and improved world relations. The strongest influence of education is evident in perceived improvement of information and world relations; less strong is the educational influence on improved education and communication efficiency. Adults in professional and managerial positions with very high incomes are more inclined to see benefit from communication satellites in efficiency and improved world relations; adults in white collar jobs share the optimism about improved information. An income of $7,000 is the criterion for perceived improvement in education; above that level, no differences in attitude appear. Length of residence has no effect, nor is any demographic subgroup significantly pessimistic about the possible negative effects of communication satellites. (See Table III-33).

TABLE III-3[illegible]

Percentage of Respondents Perceiving Changes Resulting from Teaching Machines

	Change for the worse	More or better Education	More or better Information	Inherent speed, efficiency, etc. of medium	N
SEX					
Male	9	14	2	13	469
Female	9	15	0	12	825
AGE					
18 - 39	8	19	0	15	521
40 - 59	10	14	0	14	475
60 and over	8	8	0	7	297
EDUCATION					
Less than high school	9	8	0	6	518
High school graduate	9	14	0	14	301
Some college	9	20	0	16	309
College graduate	7	23	2	26	155
OCCUPATION					
Professional, managerial	10	19	0	20	265
White collar	9	19	0	18	291
Blue collar	10	11	0	8	545
Housewife or never worked	6	12	0	9	176
INCOME					
Less than $7,000	9	11	0	10	800
$7,000 - 9,999	10	17	1	20	257
$10,000 - 14,999	8	24	0	13	177
$15,000 and over	4	26	0	19	54
RESIDENCE					
5 years or less	9	19	0	11	248
More than 5 years	9	13	0	13	1037

"No," no response, "Don't know," "No change," and miscellaneous responses omitted.

TABLE III-33

Percentage of Respondents Perceiving Changes Resulting from Communication Satellites

	Change for the worse	More or better Education	More or better Information	Inherent speed, efficiency, etc. of medium	Improved world relations	N
SEX						
Male	1	4	37	11	7	469
Female	4	4	29	6	4	825
AGE						
18 - 39	2	5	36	9	6	521
40 - 59	2	3	33	9	6	475
60 and over	6	3	23	3	4	297
EDUCATION						
Less than high school	4	2	21	3	3	518
High school graduate	3	5	33	10	5	301
Some college	2	4	43	11	9	309
College graduate	0	6	50	12	10	155
OCCUPATION						
Professional, managerial	2	4	40	13	11	265
White collar	1	4	41	7	6	291
Blue collar	3	3	26	6	4	545
Housewife or never worked	6	3	26	7	3	176
INCOME						
Less than $7,000	4	4	26	7	5	800
$7,000 - 9,999	2	4	46	6	6	257
$10,000 - 14,999	1	7	41	8	6	177
$15,000 and over	2	6	38	17	15	54
RESIDENCE						
5 years or less	2	4	34	9	5	248
More than 5 years	3	4	32	7	6	1037

"No," no response, "Don't know," "No change," and miscellaneous responses omitted.

Changes for the worse. Responses describing changes for the worse with new media are more frequent for computers and teaching machines, the media with which there is likely to have been greater experience. From 10 to 15 per cent of the respondents were pessimistic about changes from these media as opposed to less than five per cent for UHF TV and communication satellites.

Typical responses showing a negative attitude toward computers were these: "Well, I think computers are going to take over, then there won't be any need for education"; "I feel the younger generation is relying on computers more and using it as a crutch and won't be delving into fields as much"; "...it's going to make it too stereotyped, not enough individual, the danger of reducing an individual to a number." The most frequent fear expressed by respondents is that computers will put people out of work.

Among the pessimistic changes perceived as a result of teaching machines were these: "For lazy people. If they want machines, leave the teachers out. The trouble with this world is everything is too automatic. Pretty soon we won't have to go to the bathroom; even that will be automatic"; "They might be all right but you need the human element to get across to the kids what's necessary"; "This is too much like a toy. Children won't learn from that. They need a teacher to push them along"; "I don't think they'll give any advantage. They can't discipline the children as they should be disciplined. This is as important as any other learning"; "I don't know, but in my opinion I think we need people to explain things, not machines. If you don't understand something you can't ask a machine a question"; "They are taking away teachers and replacing them with robots. Our whole society is getting lazy. Everyone is going to push buttons. I don't think it's good for the kids at all."

For UHF TV, common negative responses included these: "More difficult to receive stations because too many channels too close together"; "I would expect more third rate programs and old movies"; "You couldn't get as much good out of the programs because there would be too many commercials"; "It would be hard to choose the programs to watch and TV would consume even more of your time."

Changes for the worse from communication satellites were these: "I think it's all foolishness. Should put money into something that will do us some good; not in favor of it"; "I think they are monkeying with God and should leave it alone"; "NO, I know all the stuff they are putting in the air is endangering our health and changing the weather."

3. Use of Interpersonal Information Sources

Men seek more business information in general, both from friends and experts, but both men and women more frequently seek this type of information from experts. Information about the home is more often sought from friends. Information concerning health, welfare, education and religion is the province of women, who look to experts more often than friends for guidance. Entertainment information is sought equally by men and women but more frequently from friends than from experts. Experts more often are sought on business and health/welfare topics; friends more often provide applied/household and entertainment information (See Tables III-34 and III-35).

Information-seeking from interpersonal sources is associated with age. Younger adults are more likely to seek information more frequently than

TABLE III-34

Percentage Seeking Work- and Home-related Information from Friends and "Experts"

	Business, financial, legal information				Domestic, home care, mechanical information				N	
	Friends		Experts		Friends		Experts			
	SM	F	SM	F	SM	F	SM	F	SM	F
SEX										
Male	17	13	40	27	16	10	11	15	229	469
Female	5	6	20	12	18	12	11	9	346	825
AGE										
18 - 39	11	9	32	18	24	14	11	14	195	521
40 - 59	12	8	33	19	19	12	14	10	239	475
60 and over	6	7	14	11	6	5	7	9	140	297
EDUCATION										
Less than high school	5	5	11	9	17	10	12	11	110	518
High school graduate	9	8	25	19	21	10	8	8	159	301
Some college	8	12	30	25	16	16	11	14	203	309
College graduate	22	13	45	26	17	15	14	17	100	155
OCCUPATION										
Professional, managerial	14	12	41	29	14	12	7	15	193	265
White collar	7	10	27	15	26	13	10	11	145	291
Blue collar	13	7	22	16	21	11	15	11	141	545
Housewife or never worked	3	4	10	8	7	10	19	9	69	176
INCOME										
Less than $7,000	11	6	21	14	15	9	9	11	176	800
$7,000 - 9,999	10	11	27	20	19	17	11	13	154	257
$10,000 - 14,999	7	12	27	21	19	14	11	14	142	177
$15,000 and over	14	11	41	34	18	8	12	8	95	54
RESIDENCE										
5 years or less	11	9	30	22	17	15	10	12	229	248
More than 5 years	9	8	26	16	18	10	12	11	345	1037

"No," no response, "Don't know," and miscellaneous responses omitted.

TABLE III-35

Percentage Seeking Other Information from Friends and "Experts"

	Health, Welfare, Education, Religion				Sports, Hobbies, Travel, Entertainment				N	
	Friends		Experts		Friends		Experts			
	SM	F	SM	F	SM	F	SM	F	SM	F
SEX										
Male	5	3	6	7	6	8	3	3	229	469
Female	10	9	20	21	9	4	2	2	346	825
AGE										
18 - 39	9	8	17	20	9	5	2	2	195	521
40 - 59	8	8	13	14	9	5	4	3	239	475
60 and over	7	4	13	11	5	3	2	1	140	297
EDUCATION										
Less than high school	6	6	7	14	8	3	1	1	110	518
High school graduate	4	7	14	16	9	6	5	3	159	301
Some college	10	8	18	20	9	6	3	2	203	309
College graduate	10	10	15	16	5	9	0	4	100	155
OCCUPATION										
Professional, managerial	8	8	12	12	8	7	2	2	193	265
White collar	11	9	19	22	8	4	5	2	145	291
Blue collar	6	6	12	11	6	4	3	2	141	545
Housewife or never worked	1	5	9	25	13	4	1	2	69	176
INCOME										
Less than $7,000	8	6	15	15	7	5	2	1	176	800
$7,000 - 9,999	6	6	14	17	8	7	2	3	154	257
$10,000 - 14,999	8	9	15	19	10	6	5	3	142	177
$15,000 and over	8	8	12	19	7	4	2	4	95	54
RESIDENCE										
5 years or less	6	8	13	19	9	5	2	2	229	248
More than 5 years	9	7	15	15	7	5	3	2	345	1037

"No," no response, "Don't know," and miscellaneous responses omitted.

those 60 and over. Particularly in the areas of health and welfare are the younger adults more likely to need and to seek guidance from experts.

The influence of education is much stronger in the area of business than in household items; college graduates are at least twice as likely to seek information on business-financial-legal subjects than are those with less than a high school education. Higher educational level is also associated with more information-seeking about health-welfare items; however, the criterion is at least some exposure to college as opposed to high school graduation or less, rather than a continuous increase in information-seeking with increased education. Education has no consistent bearing on information sought about the home and practical matters, nor on entertainment in general.

Adults in professional-managerial positions with high incomes are far more likely to seek expert legal or business advice. No other consistent occupation-income trends are evident in any information area. Also, the influence of residence length is only slight in the area of expert advice on business, etc.; those who are newcomers turn more often to experts for this type of information than to friends. The longer the residence, the greater is the probability that a social contact will at least "cue" a source of information on business as well as other topics, if not provide the information on demand.

4. Joint Use of Adult Education, Mass Media, and Interpersonal Information Sources

In general, high use of one information system (adult education, the mass media, or the interpersonal network) does not predict high use of either of the other systems. Patterns of high joint use are interpretable (see Table III-36), but they are specific to systems and to population subgroups.

Table III-37 shows joint use of adult education (summarized over all modes and all subject matter) and the mass media (summarized over five media). High joint use is related to respondent's education, sex, and age, in that order of strength. Therefore younger men with more than high school education are by far the highest in joint use of the two systems. Table III-36 shows that these younger men are also highest in the joint use of mass media and vocational adult education, but not other types of adult education, thereby indicating the particular activity that places them in the first rank.

The group lowest in joint use of adult education and the mass media are older men with high school education or less, followed closely by older women at the same educational level. The pattern of groups lowest in use of both systems is not simply the converse of the pattern of groups highest in joint use; certain groups exhibit a certain selectivity by being high users of one system and low users of the other.

If population subgroups are ranked according to "selectivity" (Proportion of the subgroup high in use of one system, low in use of the

TABLE III-36

Percentage High in Joint Use of Information Sources, by Sex, Age, and Education

	Men				Women			
	Under 40		40 or older		Under 40		40 or older	
	HS or less	More than HS	HS or less	More than HS	HS or less	More than HS	HS or less	More than HS
Total media use and:								
Total adult educ.	37	51	12	39	20	31	9	30
Vocational adult educ.	37	41	16	39	10	21	11	19
Arts-crafts adult educ.	18	10	12	21	22	22	15	20
Liberal arts adult educ.	22	24	6	28	20	24	13	26
Interp. info. sources	30	39	16	38	27	32	22	27
Print media and:								
Total adult educ.	26	37	8	41	18	29	11	31
Vocational adult educ.	26	31	16	36	4	19	11	17
Arts-crafts adult educ.	7	6	8	20	14	19	15	23
Liberal arts adult educ.	15	18	2	28	18	22	14	28
Interp. info. sources	18	29	15	40	16	28	23	29
Broadcast media and:								
Total adult educ.	26	31	8	16	20	15	8	14
Vocational adult educ.	30	24	13	20	16	10	8	10
Arts-crafts adult educ.	15	4	12	13	26	13	13	6
Liberal arts adult educ.	18	18	8	8	22	12	9	12
Interp. info. sources	30	22	18	16	29	19	11	12
Interpersonal info. sources and:								
Total adult educ.	48	57	19	52	39	54	15	48
Vocational adult educ.	52	51	28	53	31	41	15	30
Arts-crafts adult educ.	18	16	15	25	33	40	25	39
Liberal arts adult educ.	33	31	13	28	33	47	23	41
N =	27	49	67	85	51	68	123	101

TABLE III-37

Percentage of Joint Use of All Media and All Adult Education, Holding Sex, Age, and Education Constant

			Media Use				
			Low		High		
			Adult Educ.		Adult Educ.		
Sex	Age	Education	Low	High	Low	High	N
Male	under 40	High school or less	18.5	33.3	11.1	37.0	27
		More than high school	14.3	30.6	4.0	51.0	49
	40 or over	High school or less	47.8	20.9	19.4	11.9	67
		More than high school	16.5	27.0	17.6	38.8	85
Female	under 40	High school or less	35.3	31.3	13.7	19.6	51
		More than high school	20.6	36.8	11.8	30.9	68
	40 or over	High school or less	45.5	16.3	29.3	8.9	123
		More than high school	16.8	35.6	17.8	29.7	101

other), then women with more than high school education prove to be the most selective; among low users of mass media, they are the highest users of adult education.

Table III-38, reporting joint use of adult education and interpersonal information sources, suggests that education and age interact in accounting for these behaviors, while the role of sex is minor and consistent (less joint use by women than by men in any age and education category). Education alone appears to be a sufficient condition for high joint use. Youth alone is also a sufficient condition. When neither condition is met (older men and women with high school education or less), joint use is very low.

The population subgroups most selective in joint use of adult education and interpersonal sources are again the older men and women with high school education or less. They tend to be low in their use of adult education and high in their use of interpersonal sources.

Sex, age, and education are all related to high joint use of the mass media and interpersonal sources (Table III-39). The group highest in joint use are the younger men with more than high school education, but they stand only 1 per cent above older men at the same educational level. Younger respondents are invariably higher in joint use than older respondents, and men are generally higher than women. However, the group lowest in joint use are older men with high school education or less; they tend to be low in joint use because they are very low to begin with in media use. The most striking contrast, therefore, involves older men with more or less education, because 91 per cent of the better-educated older men are high users of one system or the other.

The population subgroup most selective in joint use of mass media and interpersonal sources are older women with more than high school education.

TABLE III-38

Percentage of Joint Use of All Adult Education and Interpersonal Information Sources, Holding Sex, Age, and Education Constant

			Interpersonal Information Source				
			Low		High		
			Adult Educ.		Adult Educ.		
Sex	Age	Education	Low	High	Low	High	N
Male	under 40	High school or less	14.8	22.2	14.8	48.1	27
		More than high school	10.2	24.4	8.16	47.1	49
	40 or over	High school or less	32.8	13.4	34.3	19.4	67
		More than high school	14.1	14.1	20.0	51.8	85
Female	under 40	High school or less	25.5	11.8	23.5	39.2	51
		More than high school	11.8	13.2	20.6	54.4	68
	40 or over	High school or less	40.6	9.75	34.1	15.4	123
		More than high school	15.8	17.8	18.8	47.5	101

TABLE III-39

Percentage of Joint Use of All Media and Interpersonal Information Sources, Holding Sex, Age, and Education Constant

			Interpersonal Information Source				
			Low		High		
			Media Use		Media Use		
Sex	Age	Education	Low	High	Low	High	N
Male	under 40	High school or less	18.5	18.5	33.3	29.6	27
		More than high school	18.4	16.3	28.6	38.8	49
	40 or over	High school or less	31.3	14.9	37.3	16.4	67
		More than high school	9.4	18.8	34.1	37.6	85
Female	under 40	High school or less	31.3	5.9	35.3	27.4	51
		More than high school	14.7	10.3	42.6	32.3	68
	40 or over	High school or less	34.1	16.3	27.6	21.9	123
		More than high school	12.9	20.8	39.6	26.7	101

Forty per cent of these respondents are high in their use of interpersonal sources but low in their use of the mass media. Twenty-one per cent are high in media and low in interpersonal sources.

Table III-36, showing activities within the systems illustrates the absence of general correlations and the presence of specific correlations that are interpretable in terms of the purposes of each population subgroup in making use of information sources. For instance, young men are likely to be high users of the media and high participants in vocational adult education; those with more than high school education are relatively higher in combining vocational adult education with use of the print media, while those with high school education or less are more likely to combine vocational adult education with use of the broadcast media. Older men with higher education continue to combine vocational adult education and high media use (especially print media), while older men with less education remain fairly high in vocational adult education but drop sharply in media use.

Except for the older men with higher education, these groups of men are unlikely to combine arts and crafts adult education with other information activities, primarily because they are initially low in arts and crafts education participation. Again, however, the older, more-educated men are the most likely to combine arts and crafts education with use of print media, while younger, less-educated men are the most likely to combine arts and crafts education with use of the broadcast media.

In a pattern that shows almost no sex difference, participation in liberal arts adult education is more likely to combine with print media use among the more-educated, with broadcast media use among the less-educated. In addition, there is more overall joint use of all media and liberal arts adult education among the more-educated.

Turning briefly to overall comparison of the population subgroups, Table III-36 shows clearly that age and education are the basic predictors of high joint use of these systems, while sex plays a less important and more specific role (in predicting that men will be higher in joint activities involving vocational adult education while women will be higher in joint activities involving arts and crafts education). Young men and women with more than high school education are very likely to be high in joint use; the younger, less-educated and the older, more-educated men and women are also quite likely to be high in joint use. The two remaining population subgroups, older men and women with high school education or less, are almost invariably in the lowest ranks of joint users. These latter groups are not likely to be high even in joint use of the most accessible sources, broadcast media and other people.

IV

INFORMATION SEEKING IN FOUR TOPIC AREAS

Sources of information are used differentially to serve specific needs. Respondents in San Mateo and Fresno were asked about where they obtained information in four areas -- national affairs, local public affairs, occupations and homemaking, and leisure activities. Before a summary table is presented on the relative frequency of source use, the data on each of these information areas are discussed in relation to the demographic variables of sex, age, education, occupation, income and length of residence.

National Affairs

In seeking information concerning national affairs, adults more often turn to newspapers and magazines than to any other sources (See Table IV-1). Men are even more likely than women to use these print media; women, on the other hand, show a greater preference for broadcast media than do men. Age is not an important predictor of the type of source preferred, although the older adults are less inclined to read than to attend television or radio.

Educational level is a strong predictor of information source preferences for national affairs. There is a trend away from magazines and newspapers as prime sources at the lower educational levels. But more important are the differences shown in books versus broadcast media as sources; adults at the lower levels attend television and radio to keep abreast of national affairs while those at the college level devote more time to books and other print sources.

TABLE IV-1

Percentage of Use of National Public Affairs Information Sources

	Magazines, Newspapers		Books, Misc. Print Sources		Radio, TV		Interpersonal: family, friend		Interpersonal: group, expert, stranger, unspecified		N	
	SM	F	SM	F	SM	F	SM	F	SM	F	SM	F
SEX												
Male	83	62	4	1	9	10	5	1	10	2	227	469
Female	78	49	8	1	10	14	7	2	10	2	348	825
AGE												
18 - 39	80	53	4	0	12	12	9	0	11	0	195	521
40 - 59	82	57	8	0	7	11	5	2	11	1	239	475
60 and over	77	49	8	0	10	15	4	2	7	0	140	297
EDUCATION												
Less than high school	75	42	3	0	15	16	4	0	6	0	110	518
High school graduate	82	50	5	0	10	11	6	0	12	0	159	301
Some college	82	67	6	0	7	9	7	2	8	1	203	309
College graduate	80	75	10	0	7	7	7	2	15	5	100	155
OCCUPATION												
Professional, managerial	84	70	8	1	5	7	7	2	9	5	193	265
White collar	79	56	6	0	10	13	6	1	15	0	145	291
Blue collar	82	48	2	0	13	14	6	1	7	0	141	545
Housewife, or never worked	70	44	5	0	14	12	1	2	10	0	69	176
INCOME												
Less than $7,000	75	47	6	0	14	14	5	0	8	0	176	600
$7,000 - 9,999	82	62	3	0	10	11	6	2	12	3	154	257
$10,000 - 14,999	82	66	8	0	6	6	7	3	8	1	142	177
$15,000 and over	82	69	8	4	6	4	7	0	13	6	95	54
RESIDENCE												
5 years or less	79	61	7	0	10	11	7	0	11	1	229	248
More than 5 years	81	52	4	0	10	12	6	2	10	0	345	103

Fresno data indicate a decline in the importance of newspapers and magazines as sources with a decline in occupational status; in San Mateo the trend is not clear. However, in both communities the professional-managerial occupational level is the least attentive to television and radio. Similarly, at the higher income levels newspapers and magazines are more important as sources and television/radio less important. An adult with a good job and a good income relies more on print sources than on the broadcast media; the obverse is true for the lower end of the socio-economic scale. Length of residence has no apparent effect.

Interpersonal sources are infrequently used for national affairs information. No clear differences among different population subgroups are evident. The importance of other sources in the area of national affairs information is emphasized by the low reliance on interpersonal sources.

Local Public Affairs

While newspapers and magazines are again the primary information sources for local affairs, interpersonal sources play a much greater role in this area (See Table IV-2). Males make greater use of both source types than do females, although the differences are small, and it is again the older adults who make smaller use of print and interpersonal sources.

The influence of education is repeated in local affairs. Higher education indicates greater use of print sources and less use of broadcast media. Information-seeking in groups or from experts is also greater with an increase in educational level, although the trend does not hold when the interpersonal source is closer to the seeker (i.e., family or friend).

TABLE IV-2

Percentage of Use of Local Public Affairs Information Sources

	Magazines, Newspapers		Books, Misc. Print Sources		Radio, TV		Interpersonal: family, friend		Interpersonal: group, expert, stranger, unspecified		N	
	SM	F	SM	F	SM	F	SM	F	SM	F	SM	F
SEX												
Male	83	46	1	0	6	4	7	6	19	13	227	469
Female	77	43	3	1	6	5	11	6	18	10	348	825
AGE												
18 - 39	79	41	2	0	8	3	11	6	19	11	195	521
40 - 59	83	51	3	1	3	5	9	4	21	12	239	475
60 and over	74	38	2	0	7	6	7	6	14	6	140	297
EDUCATION												
Less than high school	73	35	2	0	10	8	5	4	6	4	110	518
High school graduate	79	45	1	0	6	3	9	5	18	10	159	301
Some college	82	55	3	1	4	2	12	7	21	17	203	309
College graduate	82	54	2	0	5	4	9	7	28	20	100	155
OCCUPATION												
Professional, managerial	80	52	3	0	5	4	12	8	22	21	193	265
White collar	79	51	3	0	4	3	3	5	21	10	145	291
Blue collar	82	39	0	0	6	5	10	5	9	7	141	545
Housewife, or never worked	67	38	4	2	12	7	4	4	17	6	69	176
INCOME												
Less than $7,000	77	38	1	0	9	6	10	4	16	8	176	800
$7,000 - 9,999	79	57	2	0	5	1	9	6	16	14	154	257
$10,000 - 14,999	80	50	1	2	5	5	9	8	20	17	142	177
$15,000 and over	82	48	5	6	3	0	9	9	24	20	95	54
RESIDENCE												
5 years or less	76	40	3	0	6	5	10	4	17	11	229	248
More than 5 years	81	45	2	0	6	5	9	6	19	11	345	1037

The housewife relies least on newspapers and magazines to provide information on local affairs; she has more time to attend broadcast media than those who work. She is also nearly as gregarious as those at the white collar level and above (in San Mateo) in use of interpersonal sources. Again, high socio-economic status indicates greater reliance on print sources and organized interpersonal sources. Longer length of residence predictably indicates greater interest in local affairs and greater attention to newspapers and magazines as sources.

It is worth speculating on the relative functions of group and newspaper/magazine sources for local affairs information by virtue of their respective percentage weights. The organized interpersonal source may well serve the information-cueing functions that interpersonal sources appear to serve in fields such as scientific research. Specific information may then be sought in impersonal sources such as newspapers and magazines.

Occupations

Broadcast media and intimate interpersonal sources play virtually no part at all in providing information to employed adults about occupations (See Table IV-3). Men appear to be more aggressive in using all other sources and, of necessity, older (over 60) adults are least interested. Younger (under 40) adults tend to use magazines and newspapers slightly more than those in middle age (40-59); both use other print sources and organized interpersonal sources about as often.

Higher education, occupation and income levels are positively related to higher use of newspapers and magazines, other print sources and organized interpersonal sources for occupational information. The less educated, blue

TABLE IV-3

Percentage of Use of Occupational Information Sources -- Men and Single Women Only

	Magazines, Newspapers		Books, Misc. Print Sources		Radio, TV		Interpersonal: family, friend		Interpersonal: group, expert, stranger, unspecified		N	
	SM	F	SM	F	SM	F	SM	F	SM	F	SM	F
SEX												
Male	29	15	28	28	0	1	2	1	32	26	227	466
Female	16	13	25	12	0	2	1	0	28	20	69	60
AGE												
18 - 39	36	19	36	32	0	1	3	1	35	34	100	221
40 - 59	28	17	33	33	0	2	2	2	39	29	126	175
60 and over	9	6	4	8	0	0	0	1	10	8	70	130
EDUCATION												
Less than high school	7	7	23	18	0	1	2	1	23	16	56	185
High school graduate	21	12	32	26	0	1	2	2	29	21	68	100
Some college	31	21	23	34	0	2	2	1	32	27	105	146
College graduate	39	28	32	32	0	2	2	1	36	48	66	89
OCCUPATION												
Professional, managerial	37	26	22	31	0	2	1	1	35	38	139	172
White collar	20	17	29	36	0	0	2	0	39	21	49	66
Blue collar	16	8	34	21	0	1	2	2	23	19	101	275
Housewife, or never worked	0	0	0	0	0	0	0	0	0	0	0	9
INCOME												
Less than $7,000	14	9	22	20	0	2	1	1	19	19	94	319
$7,000 - 9,999	30	18	30	33	0	0	1	2	29	35	84	110
$10,000 - 14,999	28	29	33	40	0	1	3	1	41	40	64	72
$15,000 and over	41	40	24	36	0	0	2	4	41	32	51	25
RESIDENCE												
5 years or less	28	13	30	35	0	1	3	1	30	36	114	109
More than 5 years	24	16	25	24	0	2	1	1	31	16	185	412

collar worker with a yearly income below $7,000 pays least attention to any of these information sources. Above these minimal levels, the influences of socio-economic status are sometimes mixed, but the trend is toward greater informational resourcefulness at higher status levels.

The shorter the length of residence, the more important are organized interpersonal sources, books and other print sources for occupational information.

Where occupations are concerned, the relative equivalence of the aggregate print sources and organized interpersonal sources contrasts sharply with the dominance of print media in local and national affairs. The percentage advantage must accrue to the interpersonal sources in this informational area; the "cueing" function of interpersonal sources is even more probable here.

Homemaking

Housewives seek homemaking information almost equally from print media and various interpersonal sources; broadcast media almost never provide this type of information (See Table IV-4). Older women are lowest users of any source and women under 40 are the most aggressive information-seekers in this area.

Women who are college graduates are the greatest users of all the relevant information sources. High school graduates and women with only some college exposure are about equal, while the less-educated women are consistently lower than all other groups in information-seeking, except in intimate personal contact.

Women who work as well as maintain a household rely more heavily on print than on interpersonal sources. There is no clear trend indicating the

TABLE IV-4

Percentage of Use of Homemaking Information Sources -- Housewives Only

	Magazines, Newspapers		Books, Misc. Print Sources		Radio, TV		Interpersonal: family, friend		Interpersonal: group, expert, stranger, unspecified		N	
	SM	F	SM	F	SM	F	SM	F	SM	F	SM	F
SEX												
Male	0	0	0	0	0	0	0	0	0	0	0	0
Female	22	21	20	10	0	2	7	6	14	7	276	765
AGE												
18 - 39	24	25	31	17	0	2	10	7	23	11	95	298
40 - 59	22	21	19	7	1	2	4	5	10	6	113	299
60 and over	19	11	6	2	0	1	6	4	7	2	69	167
EDUCATION												
Less than high school	13	15	9	6	0	2	8	5	6	5	53	332
High school graduate	19	23	19	13	0	1	4	6	10	6	91	200
Some college	29	26	25	12	1	1	8	6	17	12	98	163
College graduate	27	27	24	18	0	0	6	9	27	12	34	66
OCCUPATION												
Professional, managerial	22	17	30	14	0	0	3	5	0	9	54	93
White collar	30	27	19	14	0	0	0	6	2	8	96	225
Blue collar	13	16	23	8	3	3	0	6	3	6	40	270
Housewife, or never worked	18	22	13	6	0	0	0	5	0	7	68	165
INCOME												
Less than $7,000	26	16	13	8	0	2	5	5	10	6	82	480
$7,000 - 9,999	19	34	23	13	0	1	7	6	13	9	70	145
$10,000 - 14,999	23	23	23	17	0	2	7	7	13	11	77	105
$15,000 and over	18	31	21	3	2	0	9	10	23	7	44	29
RESIDENCE												
5 years or less	22	21	24	16	1	3	7	4	16	7	116	138
More than 5 years	23	20	16	9	0	1	6	6	13	7	159	623

influence of occupation on the frequency of use within these sources, although the data lean toward greater print media use at the white collar and professional-managerial levels. Nor is income a consistent predictor, perhaps because of the low number in the sample at the higher income levels.

A housewife new to a community uses more books, but her use of other sources is not noticeably affected by length of residence. As in the case of job information, the housewife's needs are met about equally by all sources used.

Leisure Activities

Information on leisure activities almost never comes from broadcast media and only 7 to 10 per cent of the time from intimate interpersonal sources (See Table IV-5). Magazines, newspapers, books and other print sources are used about as often, and organized interpersonal sources slightly less often than these media.

Neither sex nor age has any consistent effect on leisure activity source preferences. Higher education indicates greater leisure information-seeking. Neither occupation or income have any discernible influence, and leisure information is sought as often by individuals new to an area as those who have lived in a community five years or longer.

Overall Trends in Use of Interpersonal and Impersonal Information Sources

The distinction between interpersonal and impersonal sources is the dependent variable in this analysis and is predicted by the demographic variables used in the subject area analyses above. In summary, information-seeking in both interpersonal and impersonal sources is greater for men and for younger adults in general (See Table IV-6). Use of both types of

TABLE IV-5

Percentage of Use of Leisure Activity Information Sources

	Magazines, Newspapers		Books, Misc. Print Sources		Radio, TV		Interpersonal: family, friend		Interpersonal: group, expert, stranger, unspecified		N	
	SM	F	SM	F	SM	F	SM	F	SM	F	SM	F
SEX												
Male	24	27	25	11	3	5	9	9	19	15	227	469
Female	25	23	22	16	2	2	11	8	20	11	348	825
AGE												
18 - 39	23	26	25	14	2	2	14	11	17	12	195	521
40 - 59	26	28	24	16	4	3	6	8	24	13	239	475
60 and over	26	17	20	10	0	3	11	5	17	12	140	297
EDUCATION												
Less than high school	25	20	15	10	3	3	6	7	16	8	110	518
High school graduate	23	26	25	14	3	2	11	11	18	12	159	301
Some college	25	27	25	19	2	3	13	9	22	16	203	309
College graduate	26	33	25	18	2	2	7	8	21	21	100	155
OCCUPATION												
Professional, managerial	28	28	22	15	2	3	9	6	17	21	193	265
White collar	23	26	27	20	4	2	9	9	24	11	145	291
Blue collar	24	24	23	10	2	3	16	9	16	11	141	545
Housewife, or never worked	20	20	21	13	3	2	3	11	28	7	69	176
INCOME												
Less than $7,000	21	22	20	10	2	3	11	8	17	9	176	800
$7,000 - 9,999	24	26	28	21	3	4	15	9	15	16	154	257
$10,000 - 14,999	32	33	21	19	4	1	7	8	29	21	142	177
$15,000 and over	21	31	27	15	1	4	5	17	18	20	95	54
RESIDENCE												
5 years or less	25	22	23	14	1	3	10	8	15	12	229	248
More than 5 years	24	25	23	14	3	3	10	9	23	13	345	1037

TABLE IV-6

Percentage of High Use of Interpersonal and Impersonal Sources Across All Four Topic Areas

	Interpersonal		Impersonal		N	
	SM	F	SM	F	SM	F
SEX						
Male	64	50	67	39	229	469
Female	61	39	62	32	346	825
AGE						
18 - 39	68	48	74	35	195	521
40 - 59	66	46	67	42	239	475
60 and over	50	30	46	21	140	297
EDUCATION						
Less than high school	43	32	47	23	110	518
High school graduate	63	42	65	30	159	301
Some college	68	54	69	48	203	309
College graduate	73	65	73	56	100	155
OCCUPATION						
Professional, managerial	68	61	70	48	193	265
White collar	65	42	65	42	145	291
Blue collar	58	38	62	27	141	545
Housewife, or never worked	55	35	52	27	69	176
INCOME						
Less than $7,000	54	36	56	26	176	800
$7,000 - 9,999	65	51	66	48	154	257
$10,000 - 14,999	70	57	70	50	142	177
$15,000 and over	69	71	68	50	95	54
RESIDENCE						
5 years or less	60	46	66	37	229	248
More than 5 years	65	42	63	35	345	1037

Areas: Leisure Activity; Local Public Affairs; National Affairs; Occupation or Homemaking.

sources increases with education and occupational level; the white collar and $7,000 income levels seem to be the significant cutting points in the influence of socio-economic status. Length of residence has no effect on use of information sources in general.

The data on specific information areas suggest differential source use. The summary data show high interpersonal reference to be positively related to high impersonal reference, but the media are more frequent sources of local and national news while interpersonal sources are at least as important as print media in the occupational and homemaking areas. By far, when overall use is measured, the most versatile information sources are magazines and newspapers; conversely, broadcast media are not frequently used as information sources, regardless of subject area. Organized interpersonal sources are important where applied information is concerned, but family and/or friends are least frequently consulted of all available information sources.

Joint Use of Interpersonal and Impersonal Information Sources Across Topic Areas

It was shown in the analysis of overall trends that use of interpersonal sources and use of impersonal sources are positively related. In terms of the individual, however, is there any tendency for preference for either interpersonal or impersonal sources to generalize across topic areas, so that, in spite of the overall positive correlation, a person may be identified as consistently preferring only one of the two source types?

Table IV-7 shows that source preference consistency is at least weakly present. When sources used in each topic area are tabulated against each

TABLE IV-7

Percentage of Joint Use of Interpersonal and Impersonal Information Sources Across Topics

		Homemaking		Occupation		Leisure Activity		National Public Affairs		Local Public Affairs	
		Interpersonal	Impersonal	Interpersonal	Impersonal	Interpersonal	Impersonal	Interpersonal	Impersonal	Interpersonal	Impersonal
Leisure Activity	Interpersonal	3.4	7.3	9.9	13.4						
	Impersonal	6.9	17.9	14.8	21.6						
National Public Affairs	Interpersonal	1.0	.9	1.8	2.0	.9	1.5				
	Impersonal	8.5	23.3	23.1	32.4	16.1	29.6				
Local Public Affairs	Interpersonal	3.3	4.8	9.5	11.4	4.7	8.2	1.2	13.8		
	Impersonal	5.8	18.9	17.1	24.6	11.2	23.2	1.6	42.2		
Overall		13.0	32.1	30.8	47.7	21.3	42.8	3.1	66.7	16.3	49.9

Total Responses = 1294
Homemaking Responses = 765 Housewives
Occupation Responses = 526 Men and Single Women

other, the percentage of consistent interpersonal responses and the percentage of consistent impersonal responses are both somewhat higher than would be expected on a chance basis.

It seems also to be true that similar topic areas evoke consistent source responses more often than dissimilar topic areas. For instance, the 42 per cent of all respondents who mention impersonal sources in both national and local public affairs information seeking are 9 per cent more than would be expected by chance, but consistent impersonal source response between each of these topic areas and leisure activities exceeds chance level by less than 2 per cent.

The Effect of Level of Interest in Public Affairs on Public Affairs Information Seeking[1]

In interpreting information-seeking behavior it may be useful to consider, in addition to demographic attributes of the information-seeker, the amount of interest he reports in the information topic. In San Mateo each respondent was asked to indicate how interested he was in national public affairs and in local public affairs, with categories ranging from "extremely interested" to "not at all interested". These interest responses are used as an interpretive variable in this analysis.

Responses were also recorded from the general question on each topic area (local and national public affairs), asking how the respondent "keeps informed" about that topic. Respondents tended to indicate primary sources used rather than enumerate all they might on occasion make use of. For this subanalysis both first and second responses were included for impersonal sources and first responses for interpersonal sources (few additional responses beyond these were obtained).

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[1] This subanalysis was prepared by Marjorie Seashore.

From previous research which bears on similar questions (Eulau et al., 1956; Kuroda, 1965), as well as intuition, one would expect that persons with high interest in public affairs, as opposed to those with low interest, would make greater use of information sources in general with respect to public affairs. This expectation is borne out by the results of the analysis.

Men and women expressed about the same degree of interest in national affairs (66 to 69 per cent high interest) and local affairs (about 34 per cent high interest). The relation of interest level to information-seeking behavior is analyzed separately for men and women, however, because of sex differences in use of the various information sources.

Table IV-8 shows the pattern of information-source use by level of interest and by sex. In 17 of the 20 individual comparisons of the behavior of low-interest and high-interest subgroups, the high-interest group reports greater use of the information source. If independence is assumed among these behaviors, a sign test of this trend is significant at the .001 probability level.

The demographic attributes of age, occupation, education, income, and (in the case of local public affairs) length of residence have already been shown to be related to public affairs information seeking. It should be seen whether the correlation between interest-level and information-seeking behavior remains when these demographic attributes are controlled.

Space limitations permit the inclusion of only two tables involving demographic controls, Tables IV-9 and IV-10. These controls on education and age are illustrative of the others, however. Assuming independence of

TABLE IV-8

Percentage of Use of Public Affairs Information Sources by Interest in Public Affairs and Sex[a]

INFORMATION SOURCES	NATIONAL AFFAIRS				LOCAL AFFAIRS			
	Male		Female		Male		Female	
	lo Int	hi Int	lo Int	hi Int	lo Int	hi Int	lo Int	hi Int
Impersonal								
Magazines, Newspapers	87	90	72	87	83	91	75	85
Books, Misc. print sources	01	06	03	10	03	02	03	04
Radio, Television	63	74	62	76	29	31	32	30
Interpersonal								
One-to-one contact Family or Friend	04	05	07	06	07	09	09	13
Group, Stranger, Expert	08	13	05	13	13	32	13	28
Total (N)	71	156	108	230	145	78	220	115

[a] Because of a general tendency toward normative response in the case of impersonal sources (e.g., "the newspaper"), both first and second impersonal source responses are included in these tables, while only the first interpersonal source is included. Thus 87 per cent of the men with low interest in national affairs mentioned either newspapers or magazines as national affairs information sources in either their first or second reponses, and 4 per cent mentioned a family member or friend as a national affairs information source in the first reponse.

TABLE IV-9

Percentage of Use of Public Affairs Information Sources by Interest in Public Affairs within Sex and Educational Level

	NATIONAL AFFAIRS								LOCAL AFFAIRS							
	lo Education				hi Education				lo Education				hi Education			
	Male		Female		Male		Female		Male		Female		Male		Female	
INFORMATION SOURCES	lo Int	hi Int	lo Int	hi Int	lo Int	hi Int	lo Int	hi Int	lo Int	hi Int	lo Int	hi Int	lo Int	hi Int	lo Int	hi Int
Impersonal																
Magazines, Newspapers	85	90	71	86	88	91	74	88	80	93	72	89	86	90	78	83
Books, Misc. Print Sources	02	04	01	08	00	10	05	11	03	07	02	04	01	00	04	04
Radio, Television	62	75	67	78	66	74	54	74	28	50	39	33	30	20	24	28
Interpersonal																
One-to-one contact, Family or Friend	00	06	06	05	09	05	10	08	08	00	10	04	06	14	08	18
Group, Stranger, Expert	08	09	03	16	06	13	08	12	02	25	10	31	21	36	17	26
Total	40	53	69	101	32	102	39	129	61	28	124	45	84	50	96	70

TABLE IV-10

Percentage of Use of Public Affairs Information Sources By Interest in Public Affairs within Sex and Age Level

INFORMATION SOURCES	NATIONAL AFFAIRS								LOCAL AFFAIRS							
	under 40				40 and older				under 40				40 and older			
	Male		Female		Male		Female		Male		Female		Male		Female	
	lo Int	hi Int	lo Int	hi Int	lo Int	hi Int	lo Int	hi Int	lo Int	hi Int	lo Int	hi Int	lo Int	hi Int	lo Int	hi Int
Impersonal																
Magazines, Newspapers	84	96	63	89	87	88	80	85	82	100	74	77	84	85	75	89
Books, Misc. Print Sources	00	06	02	01	02	08	03	13	00	00	02	08	05	04	03	37
Radio, Television	64	80	65	81	64	72	60	73	33	36	37	34	27	28	29	30
Interpersonal																
One-to-one contact Family or Friend	08	06	09	11	02	05	06	04	06	04	11	23	07	11	08	09
Group, Stranger, Expert	08	12	09	12	06	11	02	14	09	36	15	31	15	30	12	26
Total	25	51	43	75	47	105	64	157	51	25	81	35	95	54	139	81

the information-use behaviors, even with education and age controlled the correlation between interest-level and information-seeking behavior remains significant at the .001 level. The relationship remains significant with occupational control at the .05 level, with income control at the .01 level, and with length-of-residence control (local public affairs only) at the .05 level.

A large number of reversals in the trend (more information use reported by the low-interest subgroup) occur in the use of a family member or friend as information source. In Tables IV-9 and IV-10 interest-level cannot improve upon chance in predicting use of these sources. In comparison with such sources as magazines and newspapers, for which the trend is perfect across all tables, family members and friends are very accessible sources that may or may not satisfy the information-seeker with high interest in the topic, depending on their qualifications as information-givers.

It may be concluded that interest in the content of the information is, together with other attributes of the information-seeker, an important predictor of information-seeking behavior.

Sources Used for Specific Local and Nonlocal News Stories

Thus far, this chapter has examined information seeking by general topic. In Fresno we also asked respondents to mention recent instances in which they had obtained specific information in each of the topic areas. Tables IV-11 and IV-12 show ways in which specific information was acquired in the area of public affairs.

These tables improve upon Tables IV-1 and IV-2 in distinguishing the roles of magazines and newspapers in providing local and nonlocal information.

TABLE IV-11

Percentage of Use of Five Sources for Specific Local News Stories, By Type of Story and Education

SOURCES:

	Newspaper	Magazine	Radio	Television	Other People	Number of Responses[a]
Administrative:						
Less than high school completion	52	0	11	24	13	91
Completed high school	55	0	24	15	7	75
Some college	48	0	18	18	16	108
Completed college or more	62	0	10	15	13	60
Social & Financial Issues:						
Less than high school completion	59	0	15	12	15	34
Completed high school	50	0	11	18	21	38
Some college	58	0	10	12	20	60
Completed college or more	64	4	20	12	0	25

[a] The number of responses is equal to the number of people at each educational level who mentioned a specific news story in each category.

TABLE IV-12

Percentage of Use of Five Sources for Specific Non-Local News Stories, By Type of Story and Education

SOURCES:

	Newspaper	Magazine	Radio	Television	Other People	Number of Responses[a]
International:						
Less than high school completion	42	3	17	38	1	246
Completed high school	42	4	21	30	3	200
Some college	43	7	17	33	1	301
Completed college or more	42	16	16	22	2	191
Domestic-Human Interest:						
Less than high school completion	32	2	21	45	0	47
Completed high school	31	3	25	36	6	36
Some college	48	4	12	34	2	68
Completed college or more	25	10	25	35	5	20
Domestic-Financial & Social						
Less than high school completion	43	0	13	43	0	30
Completed high school	39	0	17	39	6	18
Some college	44	10	15	29	2	41
Completed college or more	32	24	8	28	8	25

[a] The number of responses is equal to the number of people at each educational level who mentioned a specific news story in each category.

Although the two media taken together account for almost the same percentage of responses for both types of information, magazines have almost no role in providing local news, while they provide a substantial amount of nonlocal news. Newspapers are clearly the dominent source of information for local news, while they share this status with television in the case of nonlocal news.

Local news stories were classified as "administrative" (referring to municipal government) and "social and financial". There is no systematic difference in the ways in which "administrative" and "social and financial" news was obtained, nor does educational level appear to affect these patterns. No other source is mentioned even half as often as the newspaper, and radio, television, and other people are roughly tied as second sources.

Nonlocal news stories were classified as "international", "domestic - human interest", and "domestic - financial and social". Except for a weak tendency for television and other people to be mentioned as sources of domestic rather than international news, the particular type of nonlocal news does not appear to be related to sources used.

Within all three types of nonlocal news there is a strong correlation between education and the use of magazines. The trend is all the more strongly confirmed in that each respondent contributed data to the tabulation of only one nonlocal news type; therefore these are three independent replications of the positive relationship between education and the use of magazines for nonlocal news.

The use of television declines as education increases, in all three types, but this trend is not as striking as that of magazines. Similarly, the slight trend that newspaper use rises with education only through "some college", then declines, deserves to be examined further, but these data do not establish clearly either the presence or absence of such a trend.

V

ACHIEVEMENT MOTIVATION AND INFORMATION-SEEKING[1]

Previous chapters of this report have examined several aspects of adult information seeking. It is the purpose of this chapter, based on an exploratory study, to examine achievement motivation in relation to this behavior. Although a great deal of work has been done concerning achievement motivation and its behavioral correlates, there seems to be little research or even speculation relating it to information seeking (with such exceptions as Schramm, Lyle, and Pool, 1963, pp. 65-68; Kuhlen, 1963, p. 136).

What is Achievement Motivation?

Murray (1938) defines achievement motivation as a need "To accomplish something difficult. To master, manipulate, or organize physical objects, human beings, or ideas. To excel oneself. To rival and surpass others." According to McClelland (1953), this motive is distinguished by "performance in terms of standards of excellence" in which energy is released by the perception of a "discrepancy between expectation and event." Expectation here refers to the person as he would like to be, event to the person as he is.

Measuring Achievement Motivation

Although McClelland and others have measured achievement motivation by means of Thematic Apperception Tests, in this study one section of the questionnaire was intended to measure the motive with disguised but not projective questions. It was thought that projective questions would be too difficult and too time-consuming to administer in the field, while the problems encountered by deCharms, Morrison, Reitman, and McClelland (1955) in using direct questions did not commend that approach. The questions used in this study (F1 through F7 in San Mateo, summarized in Table V-1 below and reported in full in Appendix II) were sufficiently disguised so that respondents were not prompted to answer in conscious achievement motivation terminology.

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[1] This chapter was prepared by Matilda Rees.

Creating an achievement motivation index. A modified Likert scaling procedure was applied to the responses of the seven questions. The scoring system and criteria for scoring are presented in Figure V-1.

Figure V-1

Instructions for Scoring Section F of San Mateo Questionnaire.

[several definitions of achievement motivation were cited]

An achievement oriented adult may perceive himself in terms of himself-as-he-is and himself-as-he-wants-to-be. According to recent studies, he often sees his occupation in terms of challenge, interest, growth, or prestige. However, personal life may be considered in even broader terms, i.e. social advancement, financial, or educational. This type of person probably sees events in such a way that he feels he has outside factors and himself under his own control.

Scoring

Score questions 1 and 2 together as:

2	4	6
No Need Ach	Possible NAch	Definite NAch

Score questions 3, 4, and 7 as:

1	2	3
No need Ach	Possible NAch	Definite NAch

Questions 5 and 6 will already be marked. Simply score as:

2	1
Extremely	Quite, somewhat, not at all

Any miscellaneous answers given to 5 and 6 should be read and coded as:

2	1
Need Ach	No NAch

Reliability. Interjudge reliability seemed to be the most stringent test that could be applied, considering other evidence on the subject (Berelson, 1952, pp. 172-173, Dollard, 1959, p. 298). Both judges had read about the achievement motive. There was no discussion about the method of scoring and no practice scoring was done. Both had the same set of instructions (Figure V-1). Seventeen out of 22 times both scorers agreed on the individual's score, in three categories -- low, medium, or high need achievement (low was 7, 8, or 9 points, medium was 10, 11, or 12 points, and high was 13 points or more). This is a raw agreement of 75 per cent which falls within the limits previously used for similar research purposes (Atkinson, 1958, pp. 75, 234,679; McClelland, 1953, p. 185).

Internal validity. Each component of the need achievement index was compared with the total need achievement score. A phi coefficient which "represents the discriminating power of the statement" (Edwards, 1958, p. 213) was computed for the six parts of the scale. The coefficients ranged from .08 to .72 (See Table V-1). On the basis of the results, the two items with the lowest phi coefficients, F5 and F6, were eliminated and total scores recomputed. The range of summed scores was then dichotomized to create nearly equal groups of high and low need achievers.

Demographic Correlates of the Index

Various studies over the past fifteen years have attempted to relate achievement motivation to demographic variables. Studies by McClelland (1953, p. 182) and Veroff (1960) suggest that achievement motivation decreases with age. Need achievement has been shown to be correlated with amount of education (Veroff, 1960). Consequently, it is necessary to

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Table V-1

Percentage of High Need Achievers among Those Scoring High and Low on Each Component of the Achievement Motivation Index

Component:	Low	High	X^2	phi
Perception of change in past and future five years	16	88	90.76	.72
Perception of present activity	30	85	50.93	.54
Attributes of a good occupation	46	89	20.14	.34
Importance of hard work .	49	58	1.01	.08
Importance of mastery . .	45	64	6.28	.20
Placement of blame for personal failure . . .	45	76	14.10	.29

introduce demographic variables as controls in this analysis. Since the literature is inconclusive concerning achievement motivation in women, only the 227 male respondents were included. Men over 60 were eliminated because their answers tended to pertain to retirement plans, leaving a sample of 182. The other four variables were dichotomized and are hereafter designated as low or high age, education, occupation, and income. Age was dichotomized at 40 years, education between high school and college, occupation between blue collar and white collar, income at $10,000 (because of San Mateo's abnormally high income median). Tables V-2 through V-5 show that of the four variables, all but income are significantly related to achievement motivation. Therefore the effects of these demographic variables should be accounted for in any relationships involving achievement motivation.

Analysis: Part I - Achievement Motivation and Mass Media Usage

Do high need achievers use the mass media to a greater extent than low need achievers? Table V-6A presents the results. The achievement motivated men use more of the media than low need achievers, except in amount of television viewing. However, when the demographic variables are controlled (Table 6B, $p <.10$),[2] use of the other media also becomes ambiguous except for magazines, partly because of small numbers of respondents per cell. It seems that the achievement motivated person does not necessarily use more of any medium, except perhaps magazines, than the non-achievement motivated person.

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[2] Sign test of percentage differences in the predicted direction.

Table V-2. Achievement Motivation by Age.

		Age		
		Low	High	
Need Achievement	High	72% (55)	39% (41)	
	Low	28% (21)	61% (65)	
$X^2 = 18.83$ $p < .001$		100% (76)	100% (106)	(182)

Table V-3. Achievement Motivation by Education.

		Education		
		Low	High	
Need Achievement	High	41% (26)	59% (70)	
	Low	59% (38)	41% (48)	
$X^2 = 5.09$ $p < .025$		100% (64)	100% (118)	(182)

Table V-4. Achievement Motivation by Occupation.

		Occupation		
		Low	High	
Need Achievement	High	41% (28)	60% (68)	
	Low	59% (40)	40% (45)	
$X^2 = 5.41$		100%	100%	
$p < .025$		(68)	(113)	(181)

Table V-5. Achievement Motivation by Income.

		Income		
		Low	High	
Need Achievement	High	51% (46)	54% (50)	
	Low	49% (44)	46% (42)	
$X^2 = .08$		100%	100%	
n.s.		(90)	(92)	(182)

Table V-6

Percentage of Mass Media Use by Achievement Motivation (6A) and with Age, Education, and Occupation Held Constant (6B)

	A			B															
	All Achievement Motivation		Age	LO								HI							
			Education	LO				HI				LO				HI			
			Occupation	LO		HI		LO		HI		LO		HI				HI	
	LO	HI	Ach. M.	LO	HI	LO	HI	LO	HI	LO	HI	LO	HI	LO	HI	LO	HI	LO	HI
Radio 1/2 hr. or more daily	63	76		77	77		99	80	72	83	91	57	34	63	60	43	84	46	59
Television 1/2 hrs. or more daily	47	41		55	44	1*	33	20	14	17	45	37	67	26	40	71	17	37	17
Newspapers 1 hr. or more daily	40	42		22	11		5	40	57	0	42	47	50	50	60	57	33	40	42
Magazines 2 hrs. or more daily	36	53		22	33		66	40	43	34	54	42	50	0	40	43	66	40	59
Books 1/4 hr. or more daily	15	22		33	11		33	20	29	17	15	11	17			0	17	23	43
N	86	96		9	9	1	6	5	7	6	33	19	6	8	5	7	6	30	24

* Frequency

Note: Column two of B not included in sign test due to low frequency.

Part II - Achievement Motivation and Content Preferences[3]

A study that gives evidence of a correlation between achievement motivation and the delayed gratification pattern was conducted by Straus (1962). He defines delayed gratification pattern as impulse renunciation or self-imposed postponement of immediate gratification. He goes on to say "...even when that portion of the variance in achievement that is associated with socio-economic status and intelligence is partialled out, there is still a significant relationship between deferred gratification pattern and achievement motivation" (1962, p. 334). About fifteen years ago Schramm related the deferred gratification pattern to media content preferences (1949, p. 260).

Hypothesis. It is hypothesized that persons measured to be high need achievers will read magazines and watch television programs associated with delayed gratification while low need achievers will read magazines and watch television programs that are associated with immediate gratification.

Additional demographic analysis. In addition to the demographic variables of age, education, and occupation, a fourth variable, length of residence, was introduced in the prediction of television content preference. Length of residence was dichotomized at 5 years. It was negatively related to achievement motivation ($p < .025$).

Scaling magazine and television content. Approximately two hundred different magazines and two hundred different television programs were mentioned by the respondents. Using an eleven-point Thurstone scale, the magazines and television programs were judged on the basis of the type of gratification each was thought to provide (ten judges were used). The score of 1 was considered to be the most immediate and 11 the most delayed gratification.

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[3] A paper based on this section was presented at the annual meeting of Pacific Chapter, American Association for Public Opinion Research, January, 1966.

Reliability. All the magazines and television programs which had a Q (ambiguity) value of 2.50 or greater were eliminated from the sample. Then, to equalize the number of men reading each type of magazine, those having an S (scale) value of 7.5 or higher were placed in the delayed gratification category and were rescored as 1. Those having an S value of 5.67 or lower were assigned to the immediate gratification category and were rescored as 0.

Since television programming presented a much different distribution, the cutoff points had to be changed. A television program with an S value of 6.63 or higher was deemed to yield delayed gratification and rescored as 1, and one with an S value of 1.40 or less was considered to represent immediate gratification and rescored as a 0.

Achievement motivation as a predictor of magazine reading behavior. It is hypothesized that high need achievers prefer delayed gratification media content while low need achievers prefer immediate gratification content. Table V-7 shows that the hypothesis appears to be confirmed for magazines ($X^2 = 4.45$, $p < .05$).

Achievement motivation as a predictor of television content preferences. By itself, achievement motivation does not predict television content preferences (see Table V-8). However, Table V-9 shows that, when length of residence in San Mateo is controlled, the hypothesized relationship holds among men who have been there five years or more ($X^2 = 3.35$, $p < .10$).

Summary analysis. It is possible that the relationship between achievement motivation and media content preferences would disappear if

Table V-7. Magazine Reading Behavior by Achievement Motivation.

		Need Achievement		
		Low	High	
Magazine's Gratification Content	Delayed	30% (13)	54% (28)	
	Immediate	70% (30)	46% (24)	
$X^2 = 4.43$		100%	100%	
$p < .05$		(43)	(52)	(95)

Table V-8. Television Viewing Behavior by Achievement Motivation.

		Need Achievement		
		Low	High	
Television's Gratification Content	Delayed	37% (17)	51% (22)	
	Immediate	63% (29)	49% (21)	
$X^2 = 1.29$		100%	100%	
n.s.		(46)	(43)	(89)

Table V-9

Television Viewing Behavior by Achievement Motivation,
Holding Length of Residence Constant

Less than 5 Years

		Achievement Motivation		
		Low	High	
Television Gratification Content	Delayed	42% (5)	39% (9)	
	Immediate	58% (7)	61% (14)	
$X^2 = .05$ n.s.		100% (12)	100% (23)	(35)

5 Years or More

		Achievement Motivation		
		Low	High	
Television Gratification Content	Delayed	35% (12)	65% (13)	
	Immediate	65% (22)	35% (7)	
$X^2 = 3.35$ $p < .10$		100% (34)	100% (20)	(54)

all controls were introduced simultaneously. Table V-10 presents the relationship between achievement motivation and media content preferences when all four demographic variables are controlled. This analysis lends itself only to a sign test, which shows that the correlation between achievement motivation and type of magazine read is significant ($p < .05$) while the correlation of achievement motivation with television content preferences is not.

Magazine and television content preferences. In order to explore why achievement motivation did not predict television content preferences, the correlation between the two media was computed. Table V-11 shows that television's and magazine's gratification content are not related. This finding may perhaps be explained by differences in the delayed gratification content of the two media. What have been scaled as delayed gratification content programs have a great deal of immediate gratification in their format. It may be that achievement motivated men seeking delayed gratification content in the mass media are more likely to turn to magazines than to television. Therefore, achievement motivation appears to be a predictor of magazine content selection, while the relationship of achievement motivation to television remains inconclusive.

Part III - Achievement Motivation and Reasons for Use of Mass Media

Reasons why the various media are used seem to be absent from most of the available studies. Schramm, in The Mass Media in the Human Life Cycle (1965), deals with general content preferences which are explained in terms of demographic variables or life styles. Berelson (1949) discusses seven reasons, but does not relate them to demographic variables. The present

Table V-10

Magazine and Television Content Preferences by Achievement Motivation, Controlling on Age, Education, Occupation, and Income

						NAch				NAch			
						LO		HI		LO		HI	
Age	Educ	Occup	Income	% Hi NAch	N[a]	MAG imm	MAG del	MAG imm	MAG del	TV imm	TV del	TV imm	TV del[b]
LO	LO	LO	LO	50	14	3	0	2	1	4	1	3	0
			HI	67	3	0	0	1	1	0	0	1	0
		HI	LO	86	7	0	1	3	0	1	0	2	1
			HI	--	0	-	-	-	-	-	-	-	-
	HI	LO	LO	64	11	1	1	0	2	1	2	1	0
			HI	0	1	1	0	-	-	0	1	-	-
		HI	LO	75	20	2	1	5	2	3	0	3	3
			HI	95	19	0	1	5	8	-	-	3	6
	LO	LO	LO	20	20	7	1	0	1	7	2	0	2
			HI	33	6	1	0	1	1	0	1	0	1
		HI	LO	50	6	2	0	1	0	1	1	0	1
			HI	29	7	0	1	1	0	2	1	0	2
	HI	LO	LO	20	5	1	0	1	0	2	0	1	0
			HI	63	8	3	0	0	1	2	1	1	1
		HI	LO	50	6	3	0	1	2	1	2	1	1
			HI	44	48	5	7	3	9	4	5	5	4

Magazines $p < .05$
Television n.s.

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[a] Frequencies in the magazine and television columns sum to N only when every respondent in the subgroup read a scaled magazine or viewed a scaled television program. Some magazines and many television programs failed to scale because of judgmental ambiguity and others were dropped from the scale because they were simply neutral.

[b] imm = Immediate gratification del = Delayed gratification

Table V-11

Television Viewing Behavior by Magazine Reading Behavior[a]

	Magazine's Gratification Content		
Television's Gratification Content	Immediate	Delayed	
Delayed	37% (11)	45% (9)	
Immediate	63% (19)	55% (11)	
X^2 = .09 n.s.	100% (30)	100% (20)	 (50)

[a] Data are presented in this table only for those respondents who read a scaled magazine and also viewed a scaled television program.

study relies on the categories established by Berelson. These are: information and interpretation of public affairs, tool for daily living, respite, social prestige, social contact, gratification in act of reading, ritualistic and near-compulsive character of reading. However, frequencies for many of these categories were so small that only two general headings survived -- information and social contact and/or relaxation.

Achievement motivation as a predictor of reasons for media usage. Table V-12 presents the results. High need achievers do not stress using the mass media for information. Even with age, education, and occupation held constant, there is a fairly consistent pattern throughout radio, television, newspapers and magazines that the high need achievers use the media for reasons of social contact or relaxation. This is not to say that high need achievers do not turn to these media for information. However, only 44 per cent of the time does the percentage of high need achievers using the media for information exceed the percentage of low need achievers using the media for information. On the other hand, 70 per cent of the time the high need achievers exceed the low need achievers in citing social contact and/or relaxation reasons.

Books were left out of the previous discussion, even though they appear on the same table, because of the uniqueness of the medium. Eighty-three percent of the time the high need achievers exceed the low need achievers in citing information as their reason for using books.

Part IV - Achievement Motivation and Adult Education

There is little research relating achievement motivation to adult education participation. McKeachie reviews the relevant literature and

Table V-12

Percentage of Reasons for Mass Media Use by Achievement Motivation (12A) and with Age, Education, and Occupation Held Constant (12B)

	A			B															
	All Achievement Motivation		Age	LO								HI							
			Education	LO				HI				LO				HI			
			Occupation	LO		HI		LO		HI		LO		HI		LO		HI	
	LO	HI	Ach. M.	LO	HI	LO	HI	LO	HI	LO	HI	LO	HI	LO	HI	LO	HI	LO	HI
Radio																			
Information	30	28		44	33		33	40	29	0	21	37	50	38	20	0	17	23	25
Social Contact/ Relaxation	44	59		44	55		67	60	71	67	70	42	17	50	60	43	84	40	50
Television																			
Information	21	15				1*	0	40	0	17	18	11	50	25	20	14	17	23	13
Social Contact/ Relaxation	72	75		67	100		67	40	57	50	76	79	50	76	80	85	67	77	79
Newspapers																			
Information	83	71		78	89	1*	50	100	57	100	73	84	83	75	100	100	50	73	67
Social Contact/ Relaxation	13	19		11			17		43		12	11	17				17	23	21
Magazines																			
Information	51	59		22	67	1*	50	80	57	67	64	42	50	50	20	43	33	53	67
Social Contact/ Relaxation	24	29		44	11		50	20	29	17	30	26	17	25	20	29	50	20	25
Books																			
Information	11	31		11	11		50		29		27	5	17	13		14	67	17	38
Social Contact/ Relaxation	22	24		22	22		17	40		17	33	16			20	14		33	33
N	86	96		9	9	1	6	5	7	6	33	19	6	8	5	7	6	30	24

* Frequency

even then can only say "One would guess that people who choose to enroll in adult education courses would be higher in the achievement motive than the general population "(In Kuhlen, 1963, p. 136). However, the same demographic variables that are related to achievement motivation are also related to adult education participation.

For instance, one would expect to find more high need achievers in vocational courses. With an increase in age, a negative correlate of achievement motivation, there is a decrease in the likelihood of taking vocational courses. There is also a consistent peak of vocational course enrollment among those who have had some college. These demographic variables were therefore retained in the analysis as controls.

Achievement motivation as a predictor of adult education participation. Table V-13 presents the summarized results. First, there is the aggregate finding that high need achievers consistently participate in more adult education than low need achievers ($p < .01$). Secondly, using achievement motivation as the basis for predicting participation in vocational adult education courses, the findings indicate that high need achievers use adult education courses for vocational purposes more than low need achievers ($p < .12$). Thirdly, achievement motivation predicts vocational adult education participation even when age, education, and occupation are held constant ($p < .05$).

The use of television for vocational education presents the outstanding exception to the above results. Low need achievers are the only men that turn to television for vocational courses. Relying on earlier evidence that achievement oriented men do not consider television a serious medium for information, this finding suggests that non-achievement oriented men are more likely to use television (a very accessible medium) for vocational training.

Table V-13

Percentage of High Participation in Adult Education Activities by Achievement Motivation (13A); Vocational Adult Education by Achievement Motivation (13B) and with Age, Education, and Occupation Held Constant (13C)

	All Achievement Motivation		Age	LO								HI							
			Education	LO				HI				LO				HI			
			Occupation	LO		HI		LO		HI		LO		HI		LO		HI	
	LO	HI	Ach. M.	LO	HI	LO	HI	LO	HI	LO	HI	LO	HI	LO	HI	LO	HI	LO	H
				A															
Summary: 4 or more adult education activities	36	75		22	77		67	40	71	67	78	15	50	26	60	28	100	50	7
	B			**C**															
Evening Classes	16	29		11	22		33	20	14	50	27	0	50	0	40	43	50	20	8
Lectures	25	33					50	20	28	33	36	16	17	25	60	28	50	40	3
Correspondence Courses	2	18		0	22		0	0	43	0	21	5	17	0	20			0	1
Group Discussions	26	32		33	11		17			17	24	21	17	13	40	14	50	40	6
Television Lessons	6	1					17							13	0	14	0	10	0
On-the-Job Training	39	66		33	78	1*	50	40	72	83	71	42	33	13	80	28	84	33	54
Self-Study	21	54		22	66	1*	50	40	57	17	55	16	34	38	40	57	50	30	58
N	86	96		9	9	1	6	5	7	6	33	19	6	8	5	7	6	30	24

13A ($P < .01$)
13B ($P < .12$)
13C ($P < .05$)

* Frequency

Column two of C not included in sign test due to low frequency.

Summary

Behavioral correlates of achievement motivation. The theory of achievement motivation leads us to expect that men oriented toward achievement will react in a similar way to various situations. Two areas previously not much explored are mass media usage and adult education participation. This exploratory study has examined the behavior of high need achievers in these areas.

Achievement motivation and the mass media. The achievement motivated men seem to be high users of the print media. The results were not positive for the broadcast media, perhaps because of the lack of challenge presented by these media, or perhaps because the possibility of high broadcast consumption is displaced when the print and broadcast media vie for available time.

Upon fairly close examination of the content preferences for magazines and television of the achievement oriented men, we found that high need achievers read magazines associated with delayed gratification. The results concerning television were inconclusive.

In general, high need achievers differed from low need achievers in the reasons why they use the media only when "social contact and/or relaxation" responses were given. Getting "information" from these media is a fairly normative response for the general population. Consequently the high need achievers cannot be distinguished by such a response. However, high need achievers, more so than low need achievers, report that they read books for "information."

Achievement motivation and adult education participation. In this area the behavior of high need achievers is fairly well distinguished from that of low need achievers. Not only do the achievement oriented men have a higher overall rate of participation, but also they are more consistent users of adult education for vocational purposes. This relationship remains significant even when the effects of age, education, and occupation are held constant.

Archetypes: A high and a low need achiever.

In order to better understand the suggested relationships between achievement motivation and its corrollary behaviors, two individuals in our sample, R.W. and K.E., will be described. They are both 51 years old and may be considered archetypes.

A high need achiever. R.W. is president of an agricultural services company. He received graduate training, enjoyed school "extremely", and liked school for "learning." His need achievement score of 19 was based on such responses as:

F1. How has your life changed in the past five years?

"Daughter is grown - no longer home. Wife is no longer here. I'm doing much better professionally and have a better understanding of myself."

F2. How will your life change in the next five years?

"I will have an improved ability to be of service... improved financial status...better interpersonal relations with people."

F3. Any present activity that will affect your life in 5 years?

"The obtaining of personal insight...development of new projects... change in orientation in personal living so as to participate in more public affairs."

F4. What are the attributes of a good occupation?

"Interest in the field...ability to be of service... money."

F5. How important is it to work hard at everything you do?

"Not at all...it is more important to work effectively"

F6. How important is it to master everything?

"Extremely"

F7. What would you say is usually the matter when something doesn't go right?

"myself...have not investigated properly...or outside circumstances."

Mass media use. R.W. reads two newspapers daily, spends approximately 30 to 45 minutes on them, and reads for a "synopsis of the day's news...and for enjoyment." During the past week, he had read Time, American Journal of Farm Economics, Magazine of Farm Managers, University of California Agriculture, U.S. News and World Report, and American Scholar. He spends between 2 and 3 hours a week with magazines, and reads them for "education, general knowledge, relaxation, and enjoyment." His usage of television, which was "very little" in the past week, included "channel 9,[1] some plays, Perry Mason, and a documentary on the atomic bomb." He watches television for "education, information, and relaxation." During the past month he read Economic Planning of Foreign Projects, Food Requirements in the World Today, and The Man in the Gray Flannel Suit. He reads for "knowledge and enjoyment."

Adult education participation of R.W. R.W. has participated in seven adult education activities in the past five years. These include an evening class on public speaking, lectures on civilization and agriculture, organized group discussions about agricultural economics, television lessons on chemistry, on-the-job training, and self-study of agriculture, physiology and sociology. When asked if he could add "any other learning activity" he responded, "discussion with others who generally know more than I."

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[1] KQED, educational television.

A low need achiever. K.E. is a retired police officer. He completed high school, enjoyed school "quite a bit", and liked school for "girls, sports, and the athletic programs." His need achievement score of 9 was based on such responses as:

F1. How has your life changed in the past five years?

"I'm not working, all alone now...widower."

F2. How will your life change in the next five years?

"Hope to be a grandfather...hope my health will continue to be good."

F3. Any present activity that will affect your life in five years?

"No."

F4. What are the attributes of a good occupation?

"Something you like to do real well...that you're interested in...not as a job, but a life's work."

F5. How important is it to work hard at everything you do?

"Somewhat."

F6. How important is it to master everything?

"Somewhat."

F7. What would you say is usually the matter when something doesn't go right?

"Not thinking clearly...in a hurry."

Mass media behavior of K.E. K.E. also reads two newspapers a day, but spends more than an hour on them. He reads for "the news...world interest... to see what Uncle Sam is doing now." He read only Readers Digest in the past week, and spent approximately 2 hours reading it. He reads the magazine because he "likes the material in it...the articles." He views sports programs, John Wayne movies, Lawrence Welk, and westerns on television. He uses this medium for "relaxation...nothing else to do at the time...and my doctor said to watch T.V." He read no books during the past month.

Adult education participation of K.E. K.E. participated in only one adult education activity: a group discussion about religion.

T.A.: a deviant case. R.W. and K.E. seem to typify high and low need achievers. However, as shown by previous tables and discussions, need achievement and its correlates cannot be explained without encountering "deviant" behavior patterns. Following is a brief description of such a case. T.A. is 43. He completed medical school and is now a radiologist. He enjoyed school "extremely" and liked "everything" about it. His need achievement score of 9 was based on such responses as:

F1. How has your life changed in the past five years?
"A little noisier, that's all."

F2. How will your life change in the next five years?
"More and bigger kids."

F3. Any present activity that will affect your life in five years?
"No."

F4. What are the attributes of a good occupation?
"If you enjoy it."

F5. How important is it to work hard at everything you do?
"Extremely"

F6. How important is it to master everything?
"Somewhat."

F7. What would you say is usually the matter when something doesn't go right?

"You do not have the ability or the interest."

Mass media use. This man read three newspapers yesterday, but only spent 1/2 hour with them. He read the newspapers "to find out what the news is." During the past week he read National Geographic, spent less than 1 hour with it, and reads magazines because he is "particularly interested in their contents." He watches the 49er's and Open End on television and uses the medium because he "likes football...the discussions on channel 9." He read a book by Bret Harte and A Shade of Difference. He reads books for "enjoyment and information."

Discussion. Clearly, T.A. has many of the behaviors of a high need achiever, yet his score is low. What does this indicate? Perhaps the most plausible explanation goes back to our basis for scoring need achievement. Response patterns of the need achiever have been determined by McClelland and his followers. Based on the TAT responses of high school and college students, they wrote a scoring manual which still is used in most studies. These response types, however, may not be applicable in a survey of the general population. Veroff et alia (1960), using the Thematic Apperception to measure motivation in a nationwide survey, encountered such a problem:

> "Can we assume that the pictures employed, which portray relatively young men and women in common life situations, will have the same meaning for young, middle aged, and aged respondents? Furthermore,...can we assume, in advance, that the active young businessman is being tested under situational circumstances that are comparable to those of an older man enjoying retirement from business and the stress of day-to-day activities? Or must we conceive of the

> possibility that these gross differences in the total life situation in which the administration of our test of motivation is embedded will produce effects comparable to those produced by experimental manipulation of situational influences in studies of motivation in college students?"

In other words, Veroff's pictorial stimuli involved young people; the scoring procedure was based on responses of students. The present study resolved the first problem by asking questions about the respondent's own life. However, the second problem is still evident in this study. Perhaps a man's achievement motivation does not really decline with age. Instead, a man who has internalized achievement motivation and has reached a plateau of success, yet who is still achievement oriented in his behavior, no longer speaks of his life in what McClelland considers achievement terminology.

Future studies need to appraise critically the extent to which present scoring techniques apply to the responses of older individuals. Admittedly, the line to be drawn is a fine one. It is hard to distinguish between a person who is no longer achievement oriented but still has the behaviors of a need achiever and a person who is still achievement oriented but has a different response pattern as well as achievement oriented behaviors.

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VI

NEED-AFFILIATION, ADULT EDUCATION, AND INFORMATION SEEKING [1]

This chapter reports an attempt to develop an index of the "need for affiliation", and to explore the extent to which such motivation predicts participation in differing settings of adult education and information seeking.

Theoretical Orientation

Murray (1938) states, "...we may loosely use the term 'need' to refer to an organic potentiality or readiness to respond in a certain way under given conditions." (p.61). The readiness or potential response for an individual termed "high" in need for affiliation is, then, "...the desire to do things in company with others." (p. 321). "To form friendships and associations. To greet, join, and live with others. To co-operate and converse sociably with others. To love. To join groups." (p. 83).

The individual high in need-affiliation may be assumed to be more aware of "affiliative cues," or situations involving differing degrees of potential interaction. If need-affiliation has motive strength, individuals high in the need should seek situations offering higher potential interaction with others. This assumes, of course, that other known predictors are held constant, and that the individuals have a choice of settings and situations.

Experimental studies of need-affiliation have developed two scoring systems based on the Thematic Apperception Test (TAT). One stresses an "approach" motive, similar to Murray's formulation; for example, Atkinson, Heyns, and Veroff (1954), and Lansing and Heyns (1959). The second system portrays need-affiliation as an "avoidance" motive' i.e., avoidance of anxiety and concern over separation from others (Shipley and Veroff, 1952). Although the comparative merits of the two scoring systems are not known, this study will concentrate on the first, "approach" motive.

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[1] This chapter was prepared by David A. Lingwood.

Methodology

Data for this study were collected from the San Mateo sample. Five hundred seventy-five respondents formed the base for a smaller sub-sample of high and low need-affiliation groups.

The Independent Variable. Scoring systems for need-affiliation mentioned in the literature are primarily based on Thematic Apperception Test results (see Shipley and Veroff, 1952). This study employed eight questions from the survey which were re-coded into eleven items after Murray's (1938) description of characteristics of the need for affiliation and its measurement. (See Figure VI-1 for codes and response percentages.) Three of the questions (leisure activities, organizational memberships, and positive attitudes toward school) were coded twice. The first coding included all responses inferred to contain need-affiliation as the primary motive for undertaking the activity, or making the response. The second coding included all activities, etc., inferred to contain need-affiliation as only one component of a more complex motivation. These latter items were coded at half weight.

Six of the items sought subjective "impressions," "attitudes," and "perceptions." If the response reflected an actual or projected desire for social contact or interaction, the response was coded as evidence of need-affiliation.

Figure VI-1

Codes and Response Percentages for Need Affiliation Index

Coding Rule	Score	Per Cent (of 575)
Leisure Activities.		
One response revealing leisure activities pursued for primary purpose of increasing social contact.	2	(10)
Two such responses.	4	(-*)
Leisure Activities.		
Number of activities assumed to have a large component of social contact motivation, but not undertaken exclusively for this reason.	1	(25)
	2	(15)
	3	(7)
Types of Organizational Memberships.		
One membership assumed undertaken for primary purpose of increasing social contact. (e.g., fraternal organizations, social clubs.) Consider average participating member and his motivations for joining.	2	(25)
Two such memberships.	4	(9)
Three such memberships.	6	(3)
Types of Organizational Memberships.		
Number of memberships where average member may be assumed to be motivated by need for social contact as one component of a more complex motivation.	1	(16)
	2	(2)
	3	(-)
Note: union memberships excluded.		
Impressions of Evening Class Attenders.		
Attenders are kinds of people who enjoy social contact.	2	(4)
Attributes of a Good Occupation.		
Response indicates a good occupation allows or increases social contact, either with co-workers or public.	2	(5)
Projected Reasons for Attending Evening Classes.		
Thinks attenders participate for purpose of social contact.	2	(6)
Perception of Present Activity Affecting the Future.		
Respondent indicates some activity which will enhance social contacts or opportunities for interaction in the future.	2	(1)
Types of Positive Attitude Toward Occupation		
Likes occupation for opportunities for social contact and interaction it provides.	2	(28)
Types of Positive Attitude Toward School.		
School liked for social contacts it provided.	2	(28)
Types of Positive Attitude Toward School.		
Number of things liked which may have strong component of social contact reasons.	1	(14)
	2	(2)
	3	(-)

* - indicates less than half of one per cent.

Two trial codings were performed on sets of fifty questionnaires by two coders, and the coding system revised after each trial. On the second coding, rough total agreement between coders was 88 per cent. Agreement on individual items ranged from 66 to 100 per cent.

Sums across the eleven items ranged from zero to sixteen, but were collapsed to a high of twelve-or-more for computation. Items were dichotomized between "need-affiliation response given," and "other response given." Across all items, the scoring system produced peaks at sum scores of two and four, and a median split (three-four) would have allowed a respondent with only two affiliative responses into the high group at this stage. Therefore, a four-five cutting point was adopted for the sums.

Phi coefficients were computed for the relation of each item to the sum, with both items and sum dichotomized. Phi ratios ranged between .03 and .61. The lowest item ("component" organizational memberships) was deleted from further analysis; this item had also been the lowest in rough agreement between coders. Phi coefficients were again computed for the remaining ten items, and ratios ranged between .26 and .64.

To establish more extreme groups on the basis of the sum scores, the middle 54 per cent were removed (as close to 50 per cent as possible). Respondents with a sum of zero or one were classed as "low" in need-affiliation, and those with a score of six or more were classed as "high." There remained 137 lows and 126 highs.

The Dependent Variables. 1) Adult Education: Eight items in the survey assessed adult education, using the broad definition of the field employed in the main body of this report. The items were re-scored from the original topic of study basis to method of study, since interest here was in settings, rather than subject matter. Evening class, lecture, and group discussion participation were summed and dichotomized to provide a measure of "group activity adult education," and correspondence course, private teacher, and self study formed as "individual activity adult education" measure. TV classes and on-the-job adult education were eliminated as ambiguous in regard to the extent of interaction possible.

2) Information Seeking: Twenty items were available covering use of various "interpersonal" methods of information seeking. These may be termed methods involving some degree of interpersonal contact between information seeker and supplier. Groups, friends, and strangers qualified as interpersonal sources. Twenty additional items assessed use of "impersonal" sources of information, including mass media, where interaction with the information supplier is not involved. Both measures covered information sought regarding leisure activities, local and national affairs, occupation and occupation change, and homemaking for housewives. Individuals were given a sum score for each of the twenty-item measures. These sum scores were dichotomized at the median, giving each respondent a high or low use score for both interpersonal and impersonal methods of information seeking.

Demographic Correlates of the Need-Affiliation Index

In experimental studies of need-affiliation, with aroused and control groups formed by random assignment, there can be no attempt to determine demographic correlates of the need. Little work has been done on need-affiliation in the general population; however, a few suggestions of possible correlates are available.

Kuhlen (1963) suggests higher "feminine sensitivity to affiliative cues," using both folklore and unnamed research as referents (p. 139). Veroff, Atkinsons, Feld, and Gurin (1960) report an increase in need-affiliation with age for male subjects. Most experimental studies have used males, but Rosenfeld and Franklin (1966) successfully manipulated need-affiliation in women.

When the need-affiliation index used in this study was run against these and other demographic variables, however, no support was gained for the suggested relationships between need-affiliation and sex and age. The present index shows a significant positive relationship with education, occupation type and income; but only non-significant trends with age and sex. (See Tables VI-1 - VI-5).

Table VI-6 shows, however, that the relationships between need-affiliation and income can be explained by the relation of the latter variable to education. When level of education is held constant, the significant positive relationship between need-affiliation and income disappears. Occupation (Table VI-7) remains significantly related to need-affiliation for the low education group only.

In view of the small cell size produced by holding both education and occupation constant, the latter variable will be deleted from the analysis except where it produces significant differences within either of the education-level groups.

Analysis

Need-Affiliation and Adult Education Setting. Education level is known to be the strongest predictor of participation in adult education. When education is controlled, however, is it possible need-affiliation might help

Table VI-1 Need-Affiliation by Sex

		N-Aff.		
		Low	High	
Sex	Male	45% (42)	55% (51)	
	Female	56% (95)	44% (75)	
		100% (137)	100% (126)	(263)

$X^2 = 2.36$
$p = .12$

Table VI-2 Need-Affiliation by Income

		N-Aff.		
		Low	High	
Income	Low	59% (99)	41% (68)	
	High	40% (36)	60% (55)	
		100% (135)	100% (123)	(358)

$X^2 = 8.41$
$p = .003$

Table VI-3 Need-Affiliation by Age

		N-Aff.		
		Low	High	
	18-39	52% (44)	48% (40)	
Age	40-59	45% (51)	55% (62)	
	60-99	64% (42)	36% (24)	
		100% (137)	100% (126)	(263)

$X^2 = 5.72$
$p = .057$

Table VI-4 Need-Affiliation by Education

		N-Aff.		
		Low	High	
Education	Low	57% (77)	35% (44)	
	High	43% (58)	65% (82)	
		100% (135)	100% (126)	(261)

$X^2 = 11.94$
$p = .0006$

Table VI-5 Need-Affiliation by Occupation

		N-Aff.		
		Low	High	
Occupation	*Low	50% (66)	29% (36)	
	**High	50% (66)	71% (88)	
		100% (132)	100% (124)	(256)

$X^2 = 10.87$
$p = .001$

* Low = blue collar, farmer, housewife, misc., and never worked.

** High = manager, professional, white collar.

Table VI-6 Need-Affiliation by Income, Holding Education Constant

Low Education

		N-Aff.		
		Low	High	
Income	Low	83% (64)	74% (32)	
	High	17% (13)	26% (11)	
		100% (77)	100% (43)	(120)

X^2 = .818
p = .365

High Education

		N-Aff.		
		Low	High	
Income	Low	59% (33)	45% (36)	
	High	41% (23)	55% (44)	
		100% (56)	100% (80)	(136)

X^2 = 2.03
p = .154

Table VI-7 Need-Affiliation by Occupation, Holding Education Constant

Low Education

		N.Aff.		
		Low	High	
Occupation	Low	62% (46)	40% (17)	
	High	38% (28)	60% (25)	
		100% (74)	100% (42)	(116)

X^2 = 4.24
p = .039

High Education

		N-Aff.		
		Low	High	
Occupation	Low	32% (18)	23% (19)	
	High	68% (38)	77% (63)	
		100% (56)	100% (82)	(138)

X^2 = .946
p = .33

predict which setting the participation-prone individual is likely to choose for adult education? The following hypothesis is the best test of the statement that high need-affiliation individuals should tend to seek settings allowing high potential interaction, i.e., group settings.

Hypothesis: Respondents high in need-affiliation will participate in group activity adult education to a greater extent than those low in need-affiliation.

It was not hypothesized that the reverse of this hypothesis would be found; i.e., that low need-affiliation individuals would participate in individual activity adult education more than would high need-affiliation individuals. Table VI-8 presents both settings, however, with education level held constant.

The hypothesis is supported for the high education group ($p < .05$), but only a non-significant trend in the predicted direction was found for the low education group (Table VI-8).

Table VI-8 shows no relationship between need affiliation and participation in individual activity adult education. The high use by the high education group of individual adult education as well as high use of group activity adult education may simply indicate that high education respondents tend to be processors of more information, regardless of the source.

Need-Affiliation and Methods of Information Seeking. Adult education may be considered a formalized method of seeking information; but is it possible that need-affiliation can predict methods of seeking information in less formalized settings? The measures developed for interpersonal and impersonal information seeking methods reflect methods used by individuals in everyday life. Again holding education level constant, need-affiliation might predict the method an individual uses to gather information.

Table VI-8 Need-Affiliation by Setting of Adult Education, Holding Education Constant

Low Education

	N-Aff.		
	Low	**High**	
Low	47% (36)	34% (15)	
High	53% (41)	66% (29)	
	100% (77)	100% (44)	(121)

$X^2 = 1.358$
$p = .244$

Group Activity Adult Education

High Education

	N-Aff.		
	Low	**High**	
Low	29% (17)	13% (11)	
High	71% (41)	87% (71)	
	100% (58)	100% (82)	(140)

$X^2 = 4.417$
$p = .036$

Low Education

	N-Aff.		
	Low	**High**	
Low	57% (44)	66% (29)	
High	43% (33)	34% (15)	
	100% (77)	100% (44)	(121)

$X^2 = .57$
$p = .45$

Individual Adult Education

High Education

	N-Aff.		
	Low	**High**	
Low	38% (22)	32% (26)	
High	62% (36)	68% (56)	
	100% (58)	100% (82)	(140)

$X^2 = .34$
$p = .56$

Hypothesis: Respondents high in need-affiliation will make greater use of interpersonal methods of information seeking than will those low in need-affiliation.

Table VI-9 presents the relationship between interpersonal information seeking methods and need-affiliation, with education level held constant. As in adult education, the hypothesis is supported for high education individuals ($p < .05$), but not for the low education group, although a slight trend exists in the predicted direction.

Although no prediction was made for impersonal methods of information seeking (Table VI-9), there is a trend for high need-affiliation respondents to make use of this method to a greater extent than the low need-affiliation group. When occupation was re-introduced as an additional control variable, this trend reached significance for the high occupation-high education group ($p = .05$; see Table VI-10). The results seem to indicate that while high education - high need-affiliation individuals do make the predicted greater use of interpersonal sources, they appear in addition to be generally greater processors of information from all sources.

Archetypes: Examples of Two Patterns.

This section will describe two respondents selected to demonstrate some characteristic participation and information seeking behaviors of low and high need-affiliation individuals within the high education group. The first shows high use of individual activity adult education and impersonal information seeking. The second is a high need-affiliation individual exemplary of the "high information processor" group; i.e., high in both types of adult education, and both types of information seeking.

Table VI-9 Need-Affiliation by Setting of Information Seeking, Holding Education Constant

Interpersonal Information Seeking

Low Education

	N-Aff. Low	N-Aff. High	
Low	65% (50)	59% (26)	
High	35% (27)	41% (18)	
	100% (77)	100% (44)	(121)

$X^2 = .197$
$p = .657$

High Education

	N-Aff. Low	N-Aff. High	
Low	62% (36)	42% (33)	
High	38% (22)	58% (48)	
	100% (58)	100% (78)	(139)

$X^2 = 5.327$
$p = .021$

Impersonal Information Seeking

Low Education

	N-Aff. Low	N-Aff. High	
Low	49% (38)	39% (17)	
High	51% (39)	61% (27)	
	100% (77)	100% (44)	(121)

$X^2 = .90$
$p = .343$

High Education

	N-Aff. Low	N-Aff. High	
Low	52% (30)	35% (29)	
High	48% (28)	65% (53)	
	100% (58)	100% (82)	(140)

$X^2 = 3.088$
$p = .0789$

Table VI-10 Need-Affiliation by Impersonal Information Seeking, For High Levels of Education and Occupation.

		N-Aff.		
		Low	High	
Impersonal Information Seeking	Low	55% (21)	35% (21)	
	High	45% (17)	67% (42)	
		100% (38)	100% (63)	(101)

$X^2 = 3.833$

$p = .05$

Person "A": "A" is a housewife and part-time bowling instructor. She is 27, has one child, and considers herself "working class." She attended two years of junior college.

The only individual "A" has questioned on any topic recently was another bowler, but whether a professional or other instructor is unclear. She is "somewhat" interested in local and national affairs, and uses TV and newspapers exclusively as sources of information on these topics. Aside from the bowling expert mentioned above, she keeps informed about her work and primary leisure activity through an instructors' magazine and bowling newspaper. Her adult education experiences are limited to bowling, weaving, and algebra; the first through on-the-job training, the second by private teacher, and algebra by means of a self-study course. "A" belongs to no organizations.

Although it seems plausible that there are opportunities open to "A" for group activities and/or instruction in bowling and weaving, all her learning on these topics was done outside of a group setting. Even though her work must bring her into contact with many individuals, she keeps informed on local affairs through mass media exclusively.

Person "B": "B" is also a woman, 54 years of age, married, with no children, who has lived in San Mateo one and a half years. She completed high school and business college, but is no longer working.

Her activities include "Newcomers' Club" (a "get acquainted" club), Eastern Star, and Job's Daughters. She knits and plays bridge, and took classes and asked friends to learn more about each activity. She studied tax information, using books, articles, and pamphlets, and considers this "self study" in adult education. Her information gathering for national and local affairs includes both personal contacts and mass media. However, she considers her high use of newspapers a function of being new in town; i.e., not yet having enough personal contacts to satisfy the need.

All of "B's" activities except knitting qualify as group-contact situations; and even for knitting she has taken group classes. She seems, however, equally ready to use group or individual information and adult education settings. She is a good example of the "high information processor."

These two women are the more extreme examples of the two different patterns found in high and low need-affiliation respondents. But what of the other possibility, the high need-affiliation individual who uses group settings to the exclusion of individual activities? The answer is that this is a rare type of person. In fact, only one good example was found in the 126 high need-affiliation respondents. The "high information processor" type seems most typical within the high need-affiliation group.

Discussion

The results of this exploratory study indicate that a high level of education (at least some college education) is a necessary condition for the appearance of a positive relationship between need for affiliation and information-seeking through interpersonal sources. This appears to be the case both for formal interpersonal sources, such as group adult education, and informal sources, such as friends and acquaintances.

This result, coming from such an exploratory study, needs to be tested more rigorously in a replication study. Additional research needs to be done to measure and perhaps to improve the reliability of the measuring instrument for determining need affiliation in general population survey interviewing. Evidence concerning the validity of the measurement procedure, perhaps by correlation with other need affiliation measures in different groups, should be obtained during the course of further developing and improving the measurement. After such improvements in the measurement procedure it would be appropriate to provide further tests of the basic hypothesis emerging from this study.

Assuming that these results will be supported by such further research, we can speculate that the perceived need for information is low in lower education groups and that without a perceived need for information, need for affiliation by itself is not a sufficient motive for interpersonal information-seeking or group-setting adult education activities. People with low need affiliation may avoid group setting and interpersonal contact, even with high perceived information needs; but people without a perceived need for information are not likely to engage in such activities because of a strong need for affiliation motive.

A possible alternate explanation for these results is that the index of need affiliation has served as a locator for the more active information seekers in the sample. It could be argued that the most active information processors will seek out and use all available information sources, both impersonal and interpersonal, and the less active information processors merely take what comes to them in the way of information without seeking it out. They perhaps do not view their interpersonal contacts as information sources. Such less active information processors (usually persons of less education than those more active) may be exposed to impersonal sources of information (usually the mass media), but be passive receivers of this information because of other motivation (perhaps entertainment, or even escape from other stimuli at the breakfast table). They may give credit to such activities for providing information without being active seekers.

Intermediate between these extremes of actively processing information from all sources, and passively accepting whatever information is provided by the immediate environment, there may be those who are active seekers from impersonal sources who are not active seekers from interpersonal or group sources. This is the more plausible interpretation of the relationship between need affiliation and information-seeking among the highly educated respondents. The difference between these respondents who are low in need affiliation and those who are active information seekers through both impersonal and interpersonal channels, may be an avoidance of social contact in the former group, rather than a positive motive force for affiliation in the latter. It may be that the index of need affiliation used in this study measures differences in utilization or avoidance of interpersonal sources. Thus, no differences would be expected among passive information processors, and avoidance of interpersonal sources by some of the active information processors (those scoring low on the need affiliation index) may have produced the positive correlation between need for affiliation and use of interpersonal information sources.

VII

SUMMARY, DISCUSSION, IMPLICATIONS

The question motivating this exploratory investigation can be summarized as, "What kinds of people seek what kinds of information through what channels?"

Interviews were conducted with 1869 adults in two California communities, San Mateo and Fresno. Respondents were asked about their use of all forms of adult education, and about their use of mass media and interpersonal information sources. They were also asked how they obtained information in four topic areas: national and international public affairs, local public affairs, occupational skills and information (homemaking, for housewives), and leisure activities. When first asked about their use of various channels of information and education, additional questions asked what topics were involved. When the first questions asked about various topic areas, additional questions asked about what channels were used. These data provided the basic evidence concerning what kinds of information is sought through what channels.

Responses to these questions were cross-tabulated by the respondents' age, sex, education, occupation, income, and length of residence in the community. Analysis of the relationships between these variables (taken one at a time and in multivariate analyses controlling several variables simultaneously) and information-seeking behavior provided the basic evidence concerning what kinds of people sought what kinds of information through what channels.

Two motivational variables, "achievement motivation" and "need for affiliation" were extensively studied, using measures developed from the survey data. The relationships between these variables and the extent and kind of information-seeking were examined.

Two experiments were conducted to test hypotheses relating "ego-involvement" to information-seeking behavior. These experiments (reported in Appendix V) found that when ego-involvement is induced as fear of failure, then increases in ego-involvement led to decreases in information-seeking under high publicity conditions, but not otherwise.

Methodological studies (also reported in appendices) developed a computer produced sampling table for random sampling of respondents within households, a "random-systematic-error coefficient" to determine sources of coding unreliability, and a "binary-coding" procedure to improve coding reliability.

Correlates of adult education participation

Adult education questions asked about the use, in the past five years, of these modes of participation: evening classes, lectures, correspondence courses, group discussions, TV lessons, on-the-job training, private lessons and independent study. Responses were coded into three subject areas: vocational, arts-crafts-household skills, and liberal arts (including religion and civic affairs).

In general, the most frequently reported mode of participation was independent study; the least frequently reported was education by correspondence. In the two communities, participation ranged from 51 per cent involvement in lecture courses (San Mateo) to only 6 per cent in private lessons (Fresno). In overall co-participation lectures and self-study were most often used together, while in vocational study on-the-job training and self study were most frequently combined as participation modes.

The best single predictor of participation in adult education is the amount of formal schooling obtained. The higher the educational level of the respondent the more likely he was to report participation in adult education. Attitude toward formal schooling had almost no effect on the degree of adult education participation when the amount of formal schooling is controlled.

The absence of a strong relationship between attitude toward school and participation can be interpreted as indicating that adult education is serving highly specific needs. The breakdowns of demographic influences on participation supports this generalization. Men are greater vocational participants while women are more likely to take instruction in arts-crafts and household skills, regardless of participation mode. However, women do favor the private teacher mode in their arts and crafts pursuits. No consistent sex differences occur in liberal arts study. Participation generally declines with age.

Those most likely to participate in vocational study have some college training but are not graduates; college graduates may well label such participation differently, thus breaking the general trend associating participation with higher education.

Level of education is not a good predictor of arts-crafts-household skills participation, but is positively related to interest in liberal arts, particularly in the TV lesson mode of participation.

Occupation, income and length of residence have no strong relation to participation in either arts-crafts or liberal arts study. Contrary to intuitive expectations, blue collar workers are reasonably well represented in liberal arts participation. Blue collar workers are no more likely to take vocational courses than men at white collar or professional-managerial levels; in fact, when the educational level is low, these latter groups make up the greater proportion of participants. When education is low, higher income predicts greater participation; no relationship between income and participation is observed once a minimal educational level (high school graduation) has been attained. Occupation and income show a stronger relationship to lectures and group discussions as participation modes than to participation in evening classes.

Vocational participation is a perceived key to occupational mobility that is closely allied to training needs in the community and to traditional career patterns. The large blue collar representation in San Mateo reflects the needs of an industrialized area as much as the influence of demographic variables associated with individual participants. Also, participation in vocational study is the only area where length of residence is related to participation; on-the-job training is greater for newcomers than older community residents.

Contrary to a false stereotype of women being greater participants, the findings indicated a predominance of men in adult education. Men's much greater utilization of vocational instruction accounted for the difference; there was tendency for women to somewhat outnumber men in other categories of adult education.

Perhaps the most surprising finding was the failure of a person's attitude toward his formal schooling to be a strong predictor of his participation in adult education. Whether a person enjoyed or disliked his own school experience was found to be less important than the amount of education obtained. Participation appears to be a function of real needs and of ability to benefit from adult education. We can speculate that people with less formal education do not have as much capacity to benefit from adult education as people with more education. This is presumably a function of the kinds of adult education available, which in turn undoubtedly reflect the demands placed on adult education institutions by the more educated.

It is as if completion of formal schooling through high school plus perception of a real need for the education (or perception of real benefits) are necessary for participation. However, it may merely be that those with less formal education are less able to see direct benefits accruing from adult education. If appropriate agencies are able to arrange relevant "pay-offs", such as jobs, and convince persons of lower formal education status that such pay-offs exist, then this obstacle to participation may be circumvented. The content of the education itself would have to be tailored to the educational level of the participants, of course. The finding that negative attitudes toward former schooling are not a bar to participation is an encouraging finding, when viewed in this context.

For adult education administrators concerned more with programs to meet existing demand, the utility of these findings lies more in the detailed tabulations than in the summary statements. Administrators could find out the demographic characteristics (age, education, occupation, etc.) of the people in the geographic area under their responsibility. This specific local information coupled with the information of this study about what kinds of people seek what information through what channels could be helpful in program planning.

Correlates of informational media use

Level of education is the single most powerful predictor of media use for information. The preceding discussions of individual media have shown that those sources commonly associated with information -- newspapers, magazines, non-fiction and reference books, and libraries -- are more frequently sought by adults with at least some exposure to college than by adults who terminated their formal education at high school graduation or earlier. The differences in informational use are even greater when college graduates are contrasted to those with high school backgrounds or less. In addition, greater education implies more specific use of educational elements within media (e.g., documentary television programs) and a more positive attitude toward potential benefits from communication changes brought about by the newer media (e.g., computers and communication satellites).

When education is controlled, the roles of occupation and income are manifest only in newspaper and magazine consumption and appear to interact rather than to exert their influences independently. Reading of both media increases with both occupation and income. More often than not, the effect of income is noticeable only above a minimal criterion, indicating discretionary use is possible only after this level is reached.

Sex is the best predictor of differences in content within the media. Men are generally more interested in news and in items related to financial or business dealings; women seek information more closely allied to their conventional roles as homemakers. When educational levels are equal for the sexes, however, these "role" differences are either attenuated sharply or disappear. Also, whenever available time is a factor, as in book consumption, women are generally greater media users than men; with time held constant, as in the case of employed men and women, only the differences in interest are consistent.

Age and length of residence are the least potent demographic indicators of informational media use. Adults 60 and over are predictably the least interested in any medium and the most pessimistic about change. Older adults tend to make less effort to seek information outside the home (e.g., go to the local library) but use available information sources (e.g., newspapers, radio and reference books) at least as frequently as younger adults. Television and book use decline as length of residence increases.

In sum, educational level is the strongest predictor of use of mass media for information. The remaining demographic variables serve more to specify the internal characteristics and conditions of information-seeking in the media than to indicate the strength or spuriousness of this major relationship.

There were no major surprises in this set of findings, which tended to confirm other studies of mass media use in general and use of media for information in particular (cf. Steiner, 1963; Schramm, Lyle and Pool, 1963). Perhaps the major utility of this set of findings is the demonstration in the context of a concern for adult education and information-seeking, of the significant extent to which the mass media are used as information sources. They can be considered as the most frequently used source of "self-instruction" in our society. More than two-thirds of the respondents were able to cite relevant content in newspapers, magazines and on television, when asked what "readily available and practical education" they thought was provided by each medium. Whether or not adult education administrators consider the mass media as educational channels, it is clear that their potential "audience" is willing to view the media in that way.

Pockets of emotional resistance to use of "new media" for education were evident. When asked about what changes could be expected from an increase in the number of UHF television stations, from communication satellites, from computers and from teaching machines, from three to twelve per cent of the respondents perceived a change for the worse, with computers and teaching machines receiving the most pessimistic responses. The media with which respondents were most familiar, UHF television and satellites, received the fewest pessimistic responses.

Correlates of interpersonal source use

In the analysis of demographic influences of interpersonal information sources, the sources were subdivided into experts and friends, and the subject matters of information into business-financial, the combined area of health-welfare-education-religion, applied household or practical material, and entertainment. Men used interpersonal sources more for business-financial information while women use such sources more for health and welfare information. Both men and women seek their respective types of information more frequently from experts; friends are an important interpersonal source where the information is to be directly applied in the home or for entertainment.

Use of interpersonal sources declines with age. The influence of education is strongest on business and health-welfare information-seeking with higher educated people using these sources more but has no consistent bearing on practical or entertainment information-seeking. Occupation and income are positively related only to the search for business-financial information. The longer the residence, the greater is the probability that a social contact will at least "cue" a source of information, if not provide the information on demand.

These findings again confirm that the better educated, who as a result of their education are most sophisticated information processors, are more likely to use all sources available to them. They also confirm findings of "interpersonal influence" studies (cf. Katz and Lazarsfeld, 1955) that people tend to turn to friends and acquaintances for information relating to matters of the home and entertainment.

Information-seeking in four topic areas

Data that allowed some specification of seeker and source were collected in four topic areas: national and international affairs, local public affairs, occupations and homemaking, and leisure activities. The sources were classified as impersonal (print and broadcast media) or interpersonal (intimate associates and groups). Generally, the data show that information-seeking in both source types is greater for men and younger adults. Education, occupation and income are positively related to information-seeking, regardless of source type.

The mass media are predominant sources for national and local news. The important of interpersonal sources increases with the applicability of information. These sources are as important as media, if not more important, for occupational and homemaking information. The omnibus sources are newspapers and magazines; further specification of news-seeking shows magazines more frequently consulted for non-local material and newspapers as the prime sources for local items. Broadcast media are not generally consulted for information.

Groups act as "cues" to media information as well as sources themselves. Intimate associates (friends and family) are least likely to provide information on any topic, with the possible exception of homemaking. Individuals do show some source preference consistency; similar topic areas call forth similar source responses.

Over all subject areas, educational level is again the strongest correlate of information-seeking and specifies the source; adults at lower educational levels depend on broadcast media while those with college training seek information in print. Although no other demographic variable correlates with leisure information-seeking, older adults generally seek less information and men generally prefer print while women vary their sources according to subject area.

Neither occupation nor income is related to homemaking information. Adults at higher occupation and income levels use more print and organized interpersonal sources for news and occupational information. The level of interest further characterizes the news-seeker; higher level of interest is positively associated with greater information-seeking behavior, even when all the demographic variables are controlled.

Length of residence is not related to national news seeking. Interest in local news does increase with length of residence. Print media are more important to newcomers for occupational information, that is, until their interpersonal sources are sufficient to "cue" relevant media materials.

Level of education serves as the best locator of information-seeking, although the strength of the relationship is varied somewhat by the topic. In areas other than leisure information, greater educational level also increases the probability of print use, but the importance of interpersonal cues increases with the applicability of the information, regardless of educational level.

These findings again confirm the relatively high significance of interpersonal sources for topics in which people have relatively high involvement. This finding is reminiscent of the relative success of group audience situations over direct media broadcasts (for example, group listening in the early post-war Canadian Broadcasting Corporation's farm forum programs and the rural radio forum experiment in India). If the goal of an adult education program is to change some of the behavior or customs in a community (as with some agricultural extension work, most adult education in developing countries, and adult education for culturally deprived minorities in developed countries), then considerable attention should be paid to information flowing in interpersonal channels. It is easier to persuade (and to educate - the distinction cannot always be maintained) people in a group than to try to reach them individually, if the interpersonal conversations are not reinforcing the educational messages.

Achievement motivation, need-affiliation and information-seeking

This study has attempted to introduce psychological variables as well as demographic locators into the exploration of adult information-seeking behavior. Two such psychological variables are "achievement motivation" and "need for affiliation". The first of these, achievement motivation, was measured by means of disguised but not projective questions that formed a modified Likert scale; the final scale was composed of four items with a 75 per cent interjudge reliability and phi coefficients of .30 or greater. The subject matter of the scale included perception of past and future change, perception of present activity, attributes of a good job, and placement of blame for personal failure. The range of scores was dochotomized to form nearly equal groups of men under 60 (N = 182, San Mateo only).

Achievement motivation was examined as a predictor of media use, TV and magazine content preferences, reasons for media use, and participation in adult education. Demographic correlates of both achievement motivation and the dependent variables were introduced as controls in the analysis. The data show that achievement motivation is positively related to education and occupation, not related to income, and negatively related to age and length of residence.

When all demographics are controlled, achievement motivation is positively related to magazine use and to delayed gratification content preferences within magazines. The relation of achievement motivation to TV use is negative while its relation to TV content preferences can only be termed inconclusive. Magazine reading and TV viewing are not related. High need achievers generally use media for reasons of social contact or relaxation but use books specifically for information more frequently than low need achievers. Achievement motivation is positively related to participation in adult education. High need achievers are more often interested in vocational courses.

The other psychological variable explored in this study was need-affiliation. Eight survey questions based on previous Thematic Apperception Test results were coded by primary motive involved in the response and by perceived desire for social contact or interaction. These items formed the need-affiliation index. Intercoder reliability was 88 per cent; phi coefficients for the final items ranged from .26 to .64. A sample of 263 San Mateo respondents was dichotomized into roughly equal groups with high or low need-affiliation.

The dependent variables in this analysis were adult education settings and modes of information seeking. Evening classes, lectures and group discussions were included as "group activity adult education" while correspondence courses, private lessons and self study were aggregated as "individual activity adult education." Groups, friends and strangers were classed as interpersonal sources and mass media were the impersonal sources of information in various subject areas. All dependent variable measures were summed and dichotomized to form high and low groups. Hypotheses predicted that adults high in need-affiliation would be high in group activity adult education and would use interpersonal information sources more frequently than adults low in need-affiliation.

The data show that need-affiliation is positively related to education and that education qualifies its relationship to occupation and income. Age and sex are not significant correlates. With education held constant, need-affiliation is positively related to group activity adult education only for the group with some college experience. There is no relation between need-affiliation and participation in individual activity adult education. The relationship between need-affiliation and interpersonal information source use again holds only for those at the higher educational levels. Individuals high in both education and need-affiliation generally make greater use of all information, regardless of source.

We can interpret the main finding of this analysis as debunking one myth about the motives of participation in evening classes and other group instructional settings. People with low need affiliation may avoid group settings and interpersonal contact, even with high information needs; but people without a perceived need for information are not likely to engage in such activities because of a strong need for affiliation motive. One practical implication of this finding might be that larger audiences might be attracted by adult education programs and curricula not requiring group contact, if such programs were expanded.

In general, the findings of this study have documented the wide diversity of sources from which adults seek education and information. People seek information and education not only from formal adult education sources, but also from libraries, books, other mass media (both print and broadcast), and from other people. Perhaps the most useful findings of the report are not contained in the summary statements, but are to be found in the detailed tabulations of the diversity of information sought through a wide variety of channels by different kinds of people.

APPENDIX I

Brief Demographies of San Mateo and Fresno[1]

San Mateo

Until 10 or 15 years ago, it would have been possible to describe both San Mateo and its county largely as suburbs for San Francisco businessmen. However, since the end of the Second World War San Mateo and Santa Clara counties have been emerging as entities in their own right. The area is becoming an unusual industrial complex based on electronics and related industries and characterized, according to the journal *Industrial Development* (October, 1962), by the "dominance of technology, the seminal role played by Stanford University, the selective attraction that the local environment has exerted on hard-to-find scientific and technical specialists and the absence of many problems that have plagued other industrial areas."

San Mateo, like other towns on the Peninsula, evolved from service as a railway depot for the surrounding rural mansions built as retreats for the San Francisco aristocracy. The 1906 earthquake first brought the middle class to the area in large numbers, looking for new homes and the prestige of suburban living. San Mateo, only 19 miles south of San Francisco, possessed a pleasant location on the west shore of the Bay and a climate kept moderate by marine air; it grew primarily as a commuter city. In 1950 approximately 70 per cent of San Mateo's employed residents commuted to the north for work. By 1960 this figure was only 29 per cent, and a rising percentage were commuting to the Peninsula from San Francisco.

Although San Mateo is the largest city in the county, it is not the major one for no one community does dominate. The 1960 census recorded a population of 69,870, which by the time of the survey in 1965 had grown to an estimated 79,000. The population of the county is about 7 times as large. The city is concerned with distribution and administration rather than manufacture, and the largest employers include Bay Meadows Race Track during the season; two department stores; the telephone company; the public utilities; and the local newspaper, The San Mateo Times. Among the national firms having administrative headquarters in San Mateo are Holly Sugar Corporation, the Chrysler Motor Corporation, and Mead Johnson Laboratories. San Mateo remains a residential community, covering almost 14 square miles. It is bisected by El Camino Real and the main line of the Southern Pacific Railroad. There is a yacht harbor but no seaport terminal, the nearest one being in Redwood City, 7 miles away.

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[1] This appendix was prepared by Robert B. Luehrs

The community is a wealthy one. In 1960 the median income was $8,236, while more than one-third of the families earned over $10,000 per annum. In 1964-65 the average household income was $9,794. The working force is preponderantly white collar. In 1960 about 57 per cent of those employed were professional people, technicians, officers, or workers in clerical and sales capacities and about 33 per cent were classified as blue collar, approximately a third of these being craftsmen or supervisors. The appearance of the new industries has introduced a certain heterogeneity into this upper middle class city. In 1960 7 per cent of the population was non-white, an increase of 2 per cent from the previous census; there are more Japanese than Negroes. About 10 per cent of the populace was foreign-born and another 22 per cent were either first generation Americans or had one parent originally an alien. Although there are numerous Italians among the immigrants, the highest percentage are from English-speaking countries.

As might be anticipated, the populace is well-educated. Thirty-three per cent of those 25 years old and over in 1960 have had schooling beyond high school, and, clearly, the residents are interested in educating their children as well. Sixteen per cent of the children of elementary school age were in one of six local private institutions in 1960. The local high school program emphasizes both science and social studies, and a $12,800,000 bond issue was recently approved for use at San Mateo Junior College, a school with an enrollment of 18,000. In the three public libraries there is a total of 159,531 volumes.

In San Mateo there are five public parks, three golf courses (two of them public), a public beach, and public swimming pools in addition to the race track. San Mateo is also host to the annual County Fair and Floral Fiesta. For the most part, however, the cultural and recreational realm seems to have been abdicated to San Francisco. The same holds true for the communications media. Although San Mateo does have its own daily newspaper, the radio station is owned by a San Francisco-based corporation, and the television channels originate in the north.

In short, San Mateo is a highly sophisticated and socially compact community, developing an independent existence for the first time in its history. The impetus for this development is the growing industrial-electronic complex on the Peninsula which is introducing a new elite of technicians into the old elites of money and business.

Fresno

Situated in the approximate geographic center of California in the San Joaquin Valley, 183 miles south of San Francisco and 222 miles north of Los Angeles, Fresno is a mushrooming city that dominates the rich agricultural life of six surrounding counties. The Valley possesses a long, hot growing season and a fine soil through irrigation. To the east of Fresno lie fruit orchards; to the west, melons, cotton and grain; to the south, oil fields and cattle and sheep ranches. Fresno County leads the nation in the annual gross value of its agricultural produce. The major money crops are grapes, used for wine and raisins, and cotton, each being valued at about $100 million in 1964.

The railroad gave the city its predominance when, in 1872, Leland Stanford created Fresno as a depot for the Southern Pacific. By 1874 Fresno was the county seat. The surrounding land was settled by colonies, frequently ethnic in character, and by small farmers. The great estates in the Valley began disappearing after the turn of the century. Fresno remains the transportation center for the area, being served by two railroads, the Santa Fe and the Southern Pacific; two state highways; the north-south freeway, U.S. 99; two airlines, Pacific and United; and a number of bus and trucking lines.

As a result, Fresno is the wholesale and retail trade center for the region, as well as its financial center. Not surprisingly, the bulk of Fresno's industry is tied to the surrounding farms, specifically the processing and packaging of produce and the manufacture of agricultural machinery and chemicals. Major employers of this sort include Schenley Industry's Roma Wine Company, Producers Cotton Oil Company, Calavo Growers of California, and California Packing Corporation, a processor of fruits and vegetables. However, there is evidence of beginning diversification in area industry, a shift away from a strictly agrarian base. Both Berven Rug Mills and Dow Chemical Company are located in Fresno, and Pittsburg Plate Glass Company has a new plant south of the city at Malaga, a component in the somewhat hazy entity, the Fresno "metropolitan area."

APPENDIX I/5

The 1960 census gave the population of Fresno proper as 133,929, and at the time of the survey in 1965, the population was estimated at 158,000. The population of the metropolitan area was 276,000 in 1965, with the county population about one and one-half times as large. Fresno has expanded steadily since the Second World War. In 1940 the city covered about 10 square miles but by 1959 the area was 29 square miles and by 1965, 37 square miles.

Fresno has few wealthy families. In 1960 only 16 per cent of the families earned more than $10,000 per annum, but 18 per cent earned less than $3,000 annually. The median income at that time was $6,109. In 1964 the average household income for the metropolitan area was $6,950. Moreover, at the time of the census, unemployment was high, about 7 per cent. Fifty-one per cent of the labor force were in professional, managerial, or white-collar capacities, while a sizeable proportion, 38 per cent, were classified as blue-collar workers, 25 per cent of whom were in skilled positions. Racial heterogeneity is increasing, with about a 10 per cent non-white population, mostly Negroes. Ethnic heterogeneity is in decline. The foreign-born now constitute 8 per cent of the population, but the total number has increased only slightly over the last decade and the percentage is consequently declining.

Especially distinctive among the foreign elements are the Mexicans, who are largely unskilled laborers, and the Armenians, who began arriving in the 1880's to work in the vineyards. They have played a prominent role in the community's cultural life, producing such notables as William Saroyan. The Fresno Philharmonic Orchestra was organized by an Armenian, Haig Yaghjian.

Fresno's economy has not placed a premium on education, so it is not extraordinary that 52 per cent of those 25 years old and over have never completed high school and that only 9 per cent are college graduates. However, Fresno is the site of Central California Commercial College, a business school; Fresno City College, a junior college with an enrollment of 6,500; and Fresno State College, a four-year school emphasizing teacher training, with an enrollment of 8,500. There is an adult education program in the local high schools which combines traditional academic subjects with courses in secretarial training, parent education, and domestic and industrial arts, and which had 12,000 participants in 1960. In the same year, the metropolitan area's library collection totaled 118,000 volumes in nine libraries.

Fresno has a Philharmonic Orchestra and a municipal band. There are two Little Theatre groups, an art gallery, and the Fresno Museum. As in the case of other expanding cities, much money has been spent on a cultural center and a "beautification program" that has included the construction of a county courthouse and a downtown mall as well as urban renewal.

Fresno is also the mass media and communication center for the area. There is one daily newspaper, The Fresno Bee, a daily legal paper, and two papers which appear weekly and bi-weekly respectively. Fresno has 14 radio stations, representing the major national networks and the Spanish language network, and five television stations.

Fresno's recreational facilities include a zoo, an amusement park, swimming pools, and public and private golf courses. There are numerous square dance clubs, several senior citizens' organizations, a California League baseball team, and suburban country clubs for the elite. Nearby are three national parks (Sequoia, Yosemite, and Kings Canyon) and hunting and fishing in the Sierras, where Fresno maintains Camp Fresno, a municipal campground.

In appearance and development, Fresno is following the pattern of transition from an exclusively agrarian economy to an independent industrial one, and in doing so it comes as close to resembling midwestern communities of comparable size as regional peculiarities and crops that are specialty rather than staple permit.

APPENDIX II

San Mateo and Fresno Questionnaires

Question Texts and Response Percentages*

San Mateo: What newspapers, if any, did you read yesterday?
Fresno: What newspapers do you read regularly?

Daily Number of Newspapers Read	San Mateo	Fresno
None	10%	7%
One	50	47
Two	40	37
Three or more	-	9
No response	1	-

Types of Newspapers Read		
Local	56	91
San Francisco (San Mateo only)	32	
Other	2	2
None or no response	10	7

San Mateo: Would you estimate how much time you spent with newspapers yesterday?

Time Spent Reading Newspapers	
One half hour or less	50
One hour or more	40
None or no response	10

San Mateo: People read newspapers for various reasons. For example, they read the newspaper because they want to sit down for a few minutes and forget about their own problems. Or because they find items in the newspaper that they can talk about with other people. Now, speaking for yourself, what would you say are some of the reasons why _you_ read the newspaper?

Reasons for Reading Newspapers	
Information or practical use	75
Relaxation or habit	12
Social reasons: contact or prestige	2
No response or uncodable response	12

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*The San Mateo and Fresno questionnaires differed somewhat. Question order in this appendix is a composite of question order in both questionnaires.

When multiple responses were permitted, only the first response is tabulated here. Dash equals less than one half of one per cent.

Fresno: Sometimes a person turns to a newspaper to find some particular information that he expects to be there. Can you remember doing this recently -- that is, looking in a newspaper for some specific information? What were you looking for?

Specific Information Sought in Newspapers	San Mateo	Fresno
News or weather		17
Statistics, Financial news, farm reports		16
Advertisements		14
Hobbies, sports, entertainment		4
Educational items		3
Women's news		1
Editorials, commentary, opinion		1
Moral or spiritual guidance		1
Uncodable response		3
None or no response		40

Fresno: When you pick up a newspaper and start to read through it, are there any sections or pages that interest you more than others?

Newspaper Sections or Pages of Special Interest	San Mateo	Fresno
Front page stories; world and national news		58
State, local, and special topic news, including sports		9
Advertisements		4
Women's news and advice columns		3
Editorials, commentary, opinion		2
Finance and business		-
Comics and humor		-
Uncodable response		19
None or no response		4

San Mateo: What magazines, if any, have you read during the past week?
Fresno: What magazines do you read regularly -- that is, almost every issue?

Weekly Number of Magazines Read	San Mateo	Fresno
None	18	24
One	15	13
Two	21	17
Three	20	17
Four or more	26	27

Types of Magazines Read	San Mateo	Fresno
News	27	
General	19	
Women's, fashion, or home	17	
Sports, hobbies, travel, natural history	10	
Business or professional	5	
Light fiction	2	
Religious, farm, and membership publications	1	
None or no response	18	

APPENDIX II/3

San Mateo: Would you estimate how much time you spent with magazines yesterday?

Time Spent Reading Magazines	San Mateo	Fresno
1/4 hour	9	
1/2 to 3/4 hour	19	
1 hour or more	13	
None or no response	59	

San Mateo: What would you say are some of the reasons why you read magazines?

Reasons for Reading Magazines		
Information or practical use	54	
Relaxation or habit	25	
Social contact or prestige	1	
No response or uncodable response	20	

Fresno: Sometimes we turn to magazines when we want to find out specific things. Can you remember doing this recently -- turning to a magazine to find some specific information? What were you looking for?

Specific Information Sought in Magazines		
Educational items		11
Women's news		10
News, weather, or time		5
Hobbies, sports, or entertainment		4
Moral or spiritual guidance		1
Statistics, financial news, or farm reports		1
Advertisements		1
Editorials, commentary, or opinion		1
Uncodable response		2
No response		64

Fresno: Sometimes we turn to magazines when we want to find out specific things. Can you remember doing this recently -- turning to a magazine to find some specific information? What were you looking for? In what magazines did you look?

Types of Magazines Read for Specific Information		
News		7
Woman's, fashion, or home		12
Business or professional		2
Sports, hobbies, travel, or natural history		4
Religion, farm, or organized membership publications		2
General reading		3
Light fiction		1
None or no response		68

APPENDIX II/4

San Mateo: Now, about television: what things on television do you watch the most?

Types of Television Programs Watched	San Mateo	Fresno
Dramatic entertainment	32	
Variety shows	14	
News	14	
Comedy shows	8	
Public affairs	5	
Daytime shows	5	
Sports	5	
Direct educational shows	4	
Quiz shows	3	
No response	9	

San Mateo: Would you estimate how much time you spent watching television yesterday?

Time Spent Watching Television	
1 hour	23
2 hours	21
3 hours	16
4 hours or more	13
None or no response	27

San Mateo: What would you say are some of the reasons why you watch television?

Reasons for Watching Television	
Information or practical use	15
Relaxation or habit	70
Social contact or prestige	5
Uncodable response	10
No response	1

Fresno: Do you find television helpful when there is some particular thing you want to know. For example, in recent days can you remember turning to television for the answer to any specific question? What was it you wanted to know?

Specific Information Sought in Television	
News, weather, or time	29
Women's news	1
Statistics, financial news, or farm reports	-
Educational programs or items	5
Editorials, commentary, or opinion	1
Moral or spiritual guidance	1
Hobbies, sports, or entertainment	3
Advertisements	1
No response or uncodable response	60

APPENDIX II/5

San Mateo: Are there any times during an average day when you listen to the radio? What things on radio do you listen to the most?
Fresno: What things on radio do you listen to the most?

Type of Radio Program Listened To	San Mateo	Fresno
Entertainment	-	1
Education	-	-
Information and understanding	6	-
News	25	42
Religion	1	2
Music	37	30
Sports	4	5
None or no response	27	20

San Mateo: Would you estimate how much time you spent listening to the radio yesterday?

Time Spent Listening to the Radio	
1/2 to 1 hour	31
2 hours	11
3 or more hours	18
None or no response	40

San Mateo: What would you say are some of the reasons why you listen to the radio?

Reasons for Listening to the Radio	
Information or practical use	24
Relaxation or habit	43
Social contact or prestige	6
No response or uncodable response	27

Fresno: Do you find radio helpful when there is some particular thing you want to know? For example, in recent days can you remember turning to radio to find the answer to some specific question? What was it you wanted to know?

Specific Information Sought in Radio	
News, weather, or time	25
Women's news	-
Statistics, financial news, or farm reports	1
Educational programs or items	1
Editorials, commentary, or opinion	1
Moral or spiritual guidance	1
Hobbies, sports, or entertainment	5
Advertisements	-
No response or uncodable response	66

APPENDIX II/6

Fresno: Sometimes the communication media we've been talking about offer readily available and practical education. From your own experience, would you say this is true of newspapers?

Practical Education from Newspapers	San Mateo	Fresno
News		38
Tools for daily living		7
Leisure time activities		-
Moral or religious		1
General information or education		15
Entertainment		-
Uncodable response		10
None or no response		29

Fresno: From your own experience, would you say that radio offers readily available and practical education?

Practical Education from Radio	
News	20
Tools for daily living	1
Leisure time activities	-
Moral or religious	2
General information or education	11
Entertainment	1
Uncodable response	7
None or no response	57

Fresno: From your own experience, would you say that television offers readily available and practical education?

Practical Education from Television	
News	17
Tools for daily living	2
Leisure time activities	-
Moral or religious	1
General information or education	36
Entertainment	1
Uncodable response	8
None or no response	33

Fresno: From your own experience, would you say that magazines offer readily available and practical education?

Practical Education from Magazines	
News	14
Tools for daily living	21
Leisure time activities	1
Moral or religious	1
General information or education	26
Entertainment	-
Uncodable response	10
None or no response	27

APPENDIX II/7

San Mateo and Fresno: Have you read any books during the past month?

Monthly Number of Books Read	San Mateo	Fresno
None	53	64
One	19	13
Two	15	6
Three or more	13	15

San Mateo and Fresno: Would you tell me the titles or authors of those you remember?

Types of Books Read	San Mateo	Fresno
Philosophical or theoretical	2	1
Religion	4	5
Pure science	-	-
Useful arts or "how to"	5	4
Fine arts or music	-	1
History or travel	6	4
Fiction	25	17
Biography	2	2
Uncodable response	2	4
None	52	61

San Mateo: Would you estimate how much time you spent reading a book yesterday?

Time Spent Reading Books	
None	78
1/4 to 1/2 hour	7
1 hour	7
2 or more hours	8

San Mateo: What would you say are some of the reasons why you read books?

Reasons for Reading Books	
Information or practical use	19
Relaxation or habit	26
Social contact or prestige	1
No response or uncodable response	54

San Mateo: When were you last in the public library?
Fresno: When did you last use the public library?

Last Visit to Public Library	San Mateo	Fresno
Within past month	24	14
More than a month ago, less than a year ago	20	17
More than a year ago	23	28
Never	13	20
Don't remember	20	20

APPENDIX II/8

San Mateo and Fresno: What was the purpose of your last visit to the public library?

Reasons for Visiting Public Library	San Mateo	Fresno
Book	33	39
Reference or research	20	13
No specific purpose	12	4
No response	35	44

San Mateo: Do you have your own collection of books? About how many books do you have?

Private Book Collection	
None	17
1 to 50	28
51 to 100	21
101 to 200	18
More than 200	14
No response or uncodable response	1

San Mateo: During the past week, do you remember using any reference books -- that is, books that you use when you need information of any kind? What book(s)?

Weekly Number of Reference Books Used	
None	34
One or two	56
Three or more	10

Types of Reference Books Used	
Work	12
Health, home, or family care	6
General educational information -- intended for personal enrichment	16
General practical information -- intended for instrumental usage	28
Sports, hobbies, or recreation	2
None or no response	36

Fresno: Can you think of any recent occasion when you needed a particular item of information and turned to a book to find it? What was it you wanted to know?

Type of Information Sought in Reference Book	
Word information	11
General area of subject matter	16
Practical or business reference	6
Health, medicine, or science	6
Etiquette	-
Hobby or sports	1

APPENDIX II/9

Type of Information Sought in Reference Book - Cont'd	San Mateo	Fresno
Household information		6
Moral or spiritual guidance		6
Uncodable response		4
No response		42

Fresno: Can you think of any recent occasion when you needed a particular item of information and turned to a book to find it? What books did you try?

Type of Reference Book Consulted		
Dictionary		11
Encyclopedia		18
Business or practical information source		6
Medical or scientific reference book		5
Etiquette book		-
Hobby or sports book		1
Household information book		5
Religious or philosophical book		6
Uncodable response		5
No response		42

San Mateo: During the past month, do you remember asking an expert for information of any kind? What kind of expert was that?

Fresno: During the past month, do you remember asking an expert for information of any kind? What did you want to know?

Type of Expert Consulted		
Work	18	8
Wealth	10	9
Health	14	16
Home care and mechanical	6	6
General information	4	4
Scientific	2	1
Sport or hobby	3	2
Shopping	1	1
Uncodable response	2	3
None or no response	41	50

San Mateo and Fresno: During the past month, do you remember asking a friend for information of any kind? What was the subject you were asking about?

Type of Information Sought from Friend		
Business, financial, or legal	10	8
Health, religion, or welfare	6	5
Domestic, home care or mechanical	14	9
Other instrumental information	4	3
Hobbies or sports	6	3
Travel or entertainment	2	2
Education	2	2
Uncodable response	3	5
None or no response	53	63

APPENDIX II/10

Fresno: During the past month, do you remember asking a friend for specific information of any kind? Why did you happen to ask that person?

Reason for Consulting Friend	San Mateo	Fresno
No special qualification		6
Business, financial, or legal experience		8
Health or religious experience		3
"Heavy" home care experience		5
Domestic experience		7
Hobby or sport experience		2
Social, travel, or entertainment experience		2
Educated or thinks clearly		3
None or no response		63

San Mateo and Fresno: What are some of the things you do in your leisure time?

Types of Leisure Time Activities	San Mateo	Fresno
Hobbies	46	34
Social	11	8
Sports -- participant	20	20
Sports -- spectator	2	2
Public service	3	1
Travel	4	5
Attendance at public affairs	3	2
Thinking or reading	4	14
Nothing or uncodable response	6	11
No response	2	4

San Mateo and Fresno: Now you mentioned [first leisure activity]. What are some of the ways in which you keep yourself informed about this -- or perhaps learn more about it?

Interpersonal Information Sources: Leisure Time Activity 1	San Mateo	Fresno
Group communication	12	5
One-to-one communication -- family member or friend	10	9
One-to-one communication -- stranger or expert	5	5
Unspecified interpersonal source	3	3
None mentioned or no response	70	78

Impersonal Information Sources: Leisure Time Activity 1	San Mateo	Fresno
Unspecified reading source	4	2
Books	14	7
Magazines and newspapers	25	25
Radio and television	2	3
Pamphlets, circulars, and bulletins	6	5
Observation of environment	2	1
None mentioned or no response	48	56

APPENDIX II/11

San Mateo and Fresno: How about [second leisure activity]. What are some of the ways in which you keep yourself informed -- or learn more -- about this?

Interpersonal Information Sources: Leisure Time Activity 2	San Mateo	Fresno
Group communication	9	3
One-to-one communication -- family member or friend	8	6
One-to-one communication -- stranger or expert	3	4
Unspecified interpersonal source	2	2
None mentioned or no response	79	85

Impersonal Information Sources: Leisure Time Activity 2	San Mateo	Fresno
Unspecified reading source	2	1
Books	11	5
Magazines and newspapers	16	18
Radio and television	2	1
Pamphlets, circulars, and bulletins	4	4
Observation of environment	2	1
None mentioned or no response	63	70

San Mateo: How about [third leisure activity]?

Interpersonal Information Sources for Leisure Activity 3	
Group communication	5
One-to-one communication -- family member or friend	6
One-to-one communication -- stranger or expert	3
Unspecified interpersonal source	2
None mentioned or no response	85

Impersonal Information Sources for Leisure Activity 3	
Unspecified reading source	1
Books	6
Magazines and newspapers	11
Radio and television	2
Pamphlets, circulars, and bulletins	3
Observation of environment	1
None mentioned or no response	74

San Mateo and Fresno: Do you belong to any clubs, organizations, societies, or other groups?

Number of Organizational Memberships		
None	37	44
One	29	29
Two	19	13
Three	12	10
Four or more	3	3

APPENDIX II/12

Types of Organizational Memberships	San Mateo	Fresno
Religious	13	18
Service	9	3
Social	18	15
Fraternal	12	11
Occupational -- union	2	3
Occupational -- business	5	3
Occupational -- professional	2	1
None or no response	38	44

Fresno: How do you get whatever information you need to keep up with the activities of these groups?

Interpersonal Information Sources: Clubs and Organizations	
Group communication	26
One-to-one communication -- family member or friend	1
One-to-one communication -- stranger or expert	2
Unspecified interpersonal source	4
None mentioned or no response	67

Impersonal Information Sources: Clubs and Organizations	
Unspecified reading source	1
Books	2
Magazines and newspapers	13
Radio and television	-
Pamphlets, circulars, and bulletins	22
Observation of environment	-
None mentioned or no response	61

San Mateo: How interested are you in local public affairs?

Interest in Local Public Affairs	
Extremely	9
Quite	25
Somewhat	49
Not at all	15
No response or don't know	2

San Mateo: How interested are you in national affairs?

Interest in National Affairs	
Extremely	27
Quite	41
Somewhat	27
Not at all	5

APPENDIX II/13

San Mateo and Fresno: What are some of the ways in which you keep yourself informed about local public affairs?

Interpersonal Information Sources: Local Public Affairs (General)

	San Mateo	Fresno
Group communication	10	3
One-to-one communication -- family member or friend	9	5
One-to-one communication -- stranger or expert	2	3
Unspecified interpersonal source	5	5
None mentioned or no response	72	84

Impersonal Information Sources: Local Public Affairs (General)

	San Mateo	Fresno
Unspecified reading source	2	-
Books	-	-
Magazines and newspapers	79	44
Radio and television	6	5
Pamphlets, circulars, and bulletins	-	-
Observation of environment	-	-
None mentioned or no response	12	50

Fresno: Can you think of some item concerning local public affairs that came up during the past week? What was it?

Specific Item: Local Public Affairs

Science, progress, or farm benefits	-
Education	1
Welfare or civil rights	4
Crime	2
Politics	15
Finance	3
Uncodable response	5
None or no response	69

Fresno: Can you think of some item concerning local public affairs that came up during the past week? How did you find out about it?

Interpersonal Information Sources: Local Public Affairs (Specific)

Group communication	1
One-to-one communication -- family member or friend	2
One-to-one communication -- stranger or expert	1
Unspecified interpersonal source	2
None mentioned or no response	94

Impersonal Information Sources: Local Public Affairs (Specific)

Unspecified reading source	-
Books	-
Magazines and newspapers	23
Radio and television	3
Pamphlets, circulars and bulletins	-
Observation of environment	-
None mentioned or no response	74

APPENDIX II/14

San Mateo and Fresno: What are some of the ways in which you keep yourself informed about national affairs?

Interpersonal Information Sources: National Affairs (General)

	San Mateo	Fresno
Group communication	6	1
One-to-one communication -- family member or friend	6	1
One-to-one communication -- stranger or expert	1	-
Unspecified interpersonal source	4	1
None mentioned or no response	83	97

Impersonal Information Sources: National Affairs (General)

Unspecified reading source	3	-
Books	2	-
Magazines and newspapers	80	54
Radio and television	10	12
Pamphlets, circulars, and bulletins	1	-
Observation of Environment	-	-
None mentioned or no response	4	33

Fresno: Can you think of some item concerning national or international affairs that came up during the past week? What was it?

Specific Item: National Affairs

Science or space	4
Education	-
Welfare or civil rights	3
Crime	2
Politics	3
Finance	2
International affairs	38
Social	1
None or no response	47

Fresno: Can you think of some item concerning national or international affairs that came up during the past week? How did you find out about it?

Interpersonal Information Sources: National Affairs (Specific)

Group communication	-
One-to-one communication -- family member or friend	1
One-to-one communication -- stranger or expert	-
Unspecified interpersonal source	1
None mentioned or no response	98

APPENDIX II/15

Impersonal Information Sources: National Affairs (Specific)

	San Mateo	Fresno
Unspecified reading source		-
Books		-
Magazines and newspapers		36
Radio and television		13
Pamphlets, circulars, and bulletins		-
Observation of environment		-
None mentioned or no response		50

San Mateo and Fresno: Just what type of work do you do?

Type of Occupation

	San Mateo	Fresno
Managerial or professional	34	20
White collar	25	22
Blue collar	24	42
Farmer, housewife, or never worked	12	14
No response or uncodable response	5	1

Occupational Status

	San Mateo	Fresno
Regularly employed male or single female	43	31
Retired	8	8
Unemployed	-	2
Housewife -- not working outside home	34	38
Housewife -- working outside home	14	21

San Mateo and Fresno: How long have you done this work?

Period of Time Employed (Males and Single Females)

	San Mateo	Fresno
1 year or less	5	4
2 to 5 years	10	8
6 to 9 years	5	6
10 years or more	30	20
No response	50	61

San Mateo and Fresno: What was your training for this work?

On-the-job Training for Occupational (Males and Single Females)

	San Mateo	Fresno
None beyond formal education	21	14
General experience	18	19
Courses given by firm or apprenticeship	18	6
No response or don't know	48	61

Formal Education for Occupation (Males and Single Females)

	San Mateo	Fresno
High school	1	1
Courses beyond high school or some college	11	6
College	7	3
Graduate work	4	2
None mentioned or no response	78	87

APPENDIX II/16

San Mateo and Fresno: How long have you held your job outside the home?

Period of Time Employed (Housewives)	San Mateo	Fresno
1 year or less	3	4
2 to 5 years	5	6
6 or more years	6	12
No response	87	77

San Mateo and Fresno: What was your training for this work?

Formal Education for Occupation (Housewives)		
High school	2	1
Courses beyond high school or some college	3	6
College	2	1
Graduate work	-	-
None mentioned or no response	93	90

On-the-job Training for Occupation (Housewives)		
None beyond formal education	7	12
General experience	5	10
Courses given by firm or apprenticeship	1	1
No response	86	77

San Mateo: What training or education is generally expected of people doing this work?

Required Formal Education for Occupation (Males and Single Females)	
High school	9
Courses beyond high school or some college	11
College	11
Graduate work	4
None mentioned or no response	64

Required On-the-job Training for Occupation (Males and Single Females)	
None beyond formal education	31
General experience	11
Courses given by firm or apprenticeship	7
No response or don't know	49

Required Formal Education for Occupation (Housewives)	
High school	3
Courses beyond high school or some college	4
College	1
Graduate work	-
None mentioned or no response	92

Required On-the-job Training for Occupation (Housewives)	San Mateo	Fresno
None beyond formal education	8	
General experience	4	
Courses given by firm or apprenticeship	1	
No response or don't know	87	

San Mateo and Fresno: In some types of work it is necessary to keep informed on various subjects in order to do the work well. Would you say that's true of this type of work? What are some of the ways in which you keep yourself informed?

Interpersonal Information Sources: Occupation (Males and Single Females) (General)	San Mateo	Fresno
Group communication	10	6
One-to-one communication -- family member or friend	1	-
One-to-one communication -- stranger or expert	3	3
Unspecified interpersonal source	3	1
Uncodable response	1	2
None mentioned or no response	82	88

Impersonal Information Sources: Occupation (Males and Single Females) (General)	San Mateo	Fresno
Unspecified reading source	2	2
Books	7	5
Magazines and newspapers	13	6
Radio and television	-	-
Pamphlets, circulars, and bulletins	6	4
Observation of environment	-	-
Uncodable response	1	2
None mentioned or no response	71	80

Interpersonal Information Sources: Occupation (Housewives) (General)	San Mateo	Fresno
Group communication	2	3
One-to-one communication -- family member or friend	-	-
One-to-one communication -- stranger or expert	1	2
Unspecified interpersonal source	1	-
None mentioned or no response	95	94

Impersonal Information Sources: Occupation (Housewives) (General)	San Mateo	Fresno
Unspecified reading source	1	1
Books	1	2
Magazines and newspapers	3	3
Radio and television	-	-
Pamphlets, circulars, and bulletins	2	2
Observation of environment	-	-
None mentioned or no response	93	90

Fresno: Can you think of any recent occasion when you needed specific information related to your work? What kind of information did you need?

Type of Occupational Information Sought (Males and Single Females	San Mateo	Fresno
Company policy -- internal		1
Company policy -- external		4
Manual skills		3
Mental skills		4
Product or project		3
No response or uncodable response		85

Fresno: Can you think of any recent occasion when you needed specific information related to your work? How did you go about finding it?

Interpersonal Information Sources: Occupation (Males and Single Females) (Specific)	
Group communication	1
One-to-one communication -- family member or friend	-
One-to-one communication -- stranger or expert	9
Unspecified interpersonal source	-
None mentioned or no response	90

Impersonal Information Sources: Occupation (Males and Single Females) (Specific)	
Unspecified reading source	1
Books	4
Magazines and newspapers	1
Radio and television	-
Pamphlets, circulars, and bulletins	1
Observation of environment	-
None mentioned or no response	93

Fresno: Can you think of any recent occasion when you needed specific information related to your work? What kind of information did you need?

Type of Occupational Information Sought (Housewives)	
Company policy -- internal	1
Company policy -- external	3
Manual skills	2
Mental skills	2
Product or project	1
No response	91

Fresno: Can you think of any recent occasion when you needed specific information related to your work? How did you go about finding it?

Interpersonal Information Sources: Occupation (Housewives) (Specific)	San Mateo	Fresno
Group communication		1
One-to-one communication -- family member or friend		1
One-to-one communication -- stranger or expert		5
Unspecified interpersonal source		-
None mentioned or no response		94

Impersonal Information Sources: Occupation (Housewives) (Specific)	San Mateo	Fresno
Unspecified reading source		1
Books		2
Magazines and mewspapers		-
Radio and television		-
Pamphlets, circulars, and bulletins		-
Observation of environment		-
None mentioned or no response		97

San Mateo: In the next few years, do you hope to change from the type of work you have been doing? Would you describe the change you hope to make?

Type of Desired Occupational Change (Males and Single Females)	
All responses except yes	33
Yes	10
No response	58

San Mateo: In the next few years, do you hope to change the type of work you are doing -- perhaps take on another job or something like that? Would you describe the change you hope to make?

Type of Occupational Change Desired (Housewives)	
All responses except yes	33
Yes	9
No response and uncodable response	58

San Mateo: People often need more information or training in order to take on a different type of work. Would you say that's true in your case? Where can you get training or information like that?

Interpersonal Information Sources: Occupational Change (Males and Single Females)	
Group communication	5
One-to-one communication -- family member or friend	-
One-to-one communication -- stranger or expert	-
Unspecified interpersonal source	-
None mentioned or no response	95

Impersonal Information Sources: Occupational Change (Males and Single Females)	San Mateo	Fresno
Unspecified reading source	-	
Books	1	
Magazines and newspapers	-	
Radio and television	-	
Pamphlets, circulars, and bulletins	-	
Observation of environment	-	
None mentioned or no response	98	

Interpersonal Information Sources: Occupational Change (Housewives)		
Group communication	5	
One-to-one communication -- family member or friend	-	
One-to-one communication -- stranger or expert	1	
Unspecified interpersonal source	-	
None mentioned or no response	94	

Impersonal Information Sources: Occupational Change (Housewives)		
Unspecified reading source	-	
Books	-	
Magazines and newspapers	-	
Radio and television	-	
Pamphlets, circulars, and bulletins	-	
Observation of environment	-	
None mentioned or no response	100	

San Mateo and Fresno: What are some of the things you like about the work you have been doing?

Types of Positive Attitude toward Occupation (Men and Single Females)		
Gratification	1	9
Worthwhile service for others	2	2
Challenging, interesting, or growing	7	9
Suitability, salary, or benefits	9	18
Nothing or no response	79	63

San Mateo: What are some of the things you like about your work outside the home?

Types of Positive Attitudes Toward Occupation (Housewives)		
Gratification	10	
Worthwhile service for others	-	
Challenging, interesting, or growing	2	
Competence and suitability	-	
Salary, benefits, security, or prestige	-	
Specific tools or working conditions	-	
Nothing or no response	87	

San Mateo: What are some of the things you dislike about this work?

Types of Negative Attitudes toward Occupation (Males and Single Females)	San Mateo	Fresno
Duties involved	6	
Not challenging	3	
Authority figures, seniority, or promotion	3	
Co-workers	5	
Wages	2	
Working conditions	10	
Psychological reaction	3	
Nothing or no response	68	

San Mateo: What are some of the things you dislike about your work outside the home?

Types of Negative Attitudes Toward Occupation (Housewives)	
Duties involved	2
Not challenging	1
Authority figures, seniority, or promotion	1
Co-workers	1
Wages	-
Working conditions	3
Psychological reaction	-
Nothing or no response	92

San Mateo and Fresno: Are there any subjects that you as a housewife need to keep informed about in order to look after your home and take care of your family? What subjects do you have in mind?

Types of General Homemaking Information Sought (Housewives)		
Home maintenance	7	4
Family care -- health	3	3
Family care -- children	4	4
Family care -- necessities of life	6	8
Financial matters	1	1
Consumer information	1	3
Education	1	1
Knowledge to be informed	3	-
"No" or no response	74	75

San Mateo and Fresno: Are there any subjects that you as a housewife need to keep informed about in order to look after your home and take care of your family? Where do you find information about these subjects?

Interpersonal Information Sources: Homemaking (Housewives) (General)		
Group communication	2	1
One-to-one communication -- family member or friend	3	3
One-to-one communication -- stranger or expert	3	2
Unspecified interpersonal source	2	1
None mentioned or no response	90	92

Impersonal Information Sources: Homemaking (Housewives) (General)	San Mateo	Fresno
Unspecified reading source	1	-
Books	8	5
Magazines and newspapers	11	12
Radio and television	-	1
Pamphlets, circulars, and bulletins	1	-
Observation of environment	1	-
None mentioned or no response	79	81

Fresno: Can you think of any recent occasion when you needed specific information in connection with the work you do around your home? What was it you needed to know?

Types of Specific Home Care Information Sought (Housewives)	
Home maintenance	9
Family care -- health	1
Family care -- children	-
Family care -- necessities of life	3
Financial matters	-
Consumer information	1
Education	-
Knowledge to be informed	-
No response or uncodable response	85

Fresno: Can you think of any recent occasion when you needed specific information in connection with the work you do around your home? How did you go about finding it?

Interpersonal Information Sources: Homemaking (Housewives) (Specific)	
Group communication	-
One-to-one communication -- family member or friend	4
One-to-one communication -- stranger or expert	5
Unspecified interpersonal source	-
None mentioned or no response	91

Impersonal Information Sources: Homemaking (Housewives) (Specific)	
Unspecified reading source	-
Books	3
Magazines and newspapers	3
Radio and television	-
Pamphlets, circulars, and bulletins	1
Observation of environment	-
None mentioned or no response	93

San Mateo and Fresno: What was the last year you completed in school?

Extent of Schooling	San Mateo	Fresno
Did not complete high school	19	40
High school graduate	28	23
Some college	35	24
College graduate	18	12
No response	1	1

San Mateo: Do you remember your reasons for stopping at that point? What were they?

Reason for Terminating Education	
Natural stopping point reached	25
Financial reasons	28
Military reasons	6
Poor health	2
Insufficient mental ability	1
No further educational opportunity	4
Lack of motivation	7
No response or uncodable response	28

San Mateo and Fresno: How much did you enjoy school?

General Evaluation of School (How much respondent enjoyed school)		
Extremely	37	31
Quite a bit	35	39
Somewhat or not at all	28	31
Don't know or no response	1	1

San Mateo and Fresno: What did you like about school?

Types of Positive Attitudes Toward School		
Challenge, accomplishment, and satisfaction	26	18
Means to an end	3	3
General academic subjects	18	24
Elective subjects	4	9
Extracurricular activities	8	9
Social gratification	17	14
Administration or faculty members	2	2
Everything	9	10
Nothing	4	6
No response or uncodable response	8	6

San Mateo: What did you dislike about school?

Types of Negative Attitudes Toward School	San Mateo	Fresno
Dissatisfaction and lack of challenge	2	
External factors	6	
General academic subjects	24	
Elective subjects	2	
Extracurricular activities	2	
Procedural regulations	9	
Administration and faculty members	7	
Everything	2	
Nothing	37	
No response or uncodable response	10	

San Mateo and Fresno: Looking back on your last years in school, would you say that your marks were above the class average, below the class average, or what?

Estimation of Class Standing at School	San Mateo	Fresno
Above average	34	32
About average	57	59
Below average	6	6
No response or don't know	2	3

San Mateo: Many evening classes are offered to adults in this area. What kinds of subjects do you usually think of in connection with these classes?

Types of Subjects Identified with Adult Education	San Mateo	Fresno
Vocational course -- white-collar	24	
Vocational course -- blue-collar	4	
Vocational course -- general	2	
Arts and crafts	14	
Household skills	6	
Liberal arts -- for vocational advancement	6	
Liberal arts -- for personal enrichment	30	
Americanization or English for foreigners	1	
None mentioned or no response	13	

Fresno: Can you think of any forms of adult education available in this area? What are they?

Types of Adult Education Available in This Area	San Mateo	Fresno
High school evening classes		65
College evening classes		50
Lectures		9
Group discussions		5
On-the-job training		9
Private instruction		6
Correspondence courses		9
Television		7
Other		20
Can't think of any		21

Types of Adult Education Available in This Area: High School Evening Classes	San Mateo	Fresno
Not checked		35
Checked		65
Types of Adult Education Available in This Area: College Evening Classes		
Not checked		50
Checked		50
Types of Adult Education Available in This Area: Lectures		
Not checked		91
Checked		9
Types of Adult Education Available in This Area: Group Discussions		
Not checked		95
Checked		5
Types of Adult Education Available in This Area: On-the-Job Training		
Not checked		91
Checked		9
Types of Adult Education Available in This Area: Private Instruction		
Not checked		94
Checked		6
Types of Adult Education Available in This Area: Correspondence Courses		
Not checked		91
Checked		9
Types of Adult Education Available in This Area: Television		
Not checked		93
Checked		7
Types of Adult Education Available in This Area: Other		
Not checked		75
Education connected with organizations		2
Occupational education		7
Special schools		2
Specific academic subjects		3
Hobbies or cultural events		3
Independent study or discussions		1
No response or uncodable response		5

Types of Adult Education Available in This Area Can't Think of Any	San Mateo	Fresno
Not checked		78
Checked		21

San Mateo: What would you say are some of the reasons why people attend evening classes?

Projected Reasons for Attending Evening Classes	
Better self -- general	24
Better self -- personal enrichment	35
Better self -- job opportunity	15
Arts and crafts	5
Household skills	1
Respite	3
Social contact	1
Gratification in act of doing	5
Ritualistic or near-compulsive character	2
No response or uncodable response	8

San Mateo: What is your first impression of the people who attend these classes -- how would you describe them?

Impressions of People Who Attend Evening Classes	
Better self -- general	9
Better self -- personal enrichment	15
Better self -- job opportunity	5
Personal qualities -- ambition or initiative	14
Personal qualities -- other	27
Specific types of people	5
Ordinary people	6
Value judgment	6
No response or uncodable response	11

San Mateo: Not counting yourself, has anyone you know attended evening classes within -- let's say -- the past year? What was the subject of the class?

Type of Evening Class Attended by Acquaintance	
Vocational course -- white-collar	26
Vocational course -- blue-collar	3
Vocational course -- general	-
Arts and crafts	7
Household skills	4
Liberal arts -- for vocational advancement	9
Liberal arts -- for personal enrichment	14
Americanization or English for foreigners	1
None mentioned or no response	36

APPENDIX II/27

San Mateo and Fresno: Let me read a list of some of the ways in which adults study. Would you please listen to the list and tell me if you have received instruction in any of these ways during -- let's say -- the past five years?

Types of Adult Education Received -- Evening Classes	San Mateo	Fresno
White collar vocational course	12	11
Other vocational course	2	2
Arts, crafts, hobbies, and sports	7	4
Household skills	2	2
Liberal arts	8	7
Religion	-	-
Civic and public affairs	1	1
Nothing specific	3	2
No response	66	71

Types of Adult Education Received -- Lectures		
White collar vocational course	14	6
Other vocational course	2	2
Arts, crafts, hobbies, and sports	3	2
Household skills	4	3
Liberal arts	8	2
Religion	5	3
Civic and public affairs	7	10
Nothing specific	6	2
No response	50	69

Types of Adult Education Received - Correspondence Courses		
White collar vocational course	4	3
Other vocational course	1	1
Arts, crafts, hobbies, and sports	-	1
Household skills	-	-
Liberal arts	2	1
Religion	-	-
Civic and public affairs	-	-
Nothing specific	1	1
No response	93	93

Types of Adult Education Received -- Group Discussions		
White collar vocational	12	5
Other vocational course	2	2
Arts, crafts, hobbies and sports	3	1
Household skills	3	2
Liberal arts	3	1
Religion	5	6
Civic and public affairs	7	7
Nothing specific	4	2
No response	59	73

Types of Adult Education Received -- Television Lessons	San Mateo	Fresno
White collar vocational	2	1
Other vocational course	-	-
Arts, crafts, hobbies and sports	5	1
Household skills	3	1
Liberal arts	14	15
Religion	-	-
Civic and public affairs	1	1
Nothing specific	3	2
No response	72	77

Types of Adult Education Received -- On-the-Job Training		
White collar vocational	23	14
Other vocational course	9	12
Arts, crafts, hobbies and sports	1	1
Household skills	-	-
Liberal arts	-	-
Religion	-	-
Civic and public affairs	-	-
Nothing specific	2	1
No response	65	72

Types of Adult Education Received -- Private Lessons		
White collar vocational	2	1
Other vocational course	-	-
Arts, crafts, hobbies and sports	9	3
Household skills	1	1
Liberal arts	1	-
Religion	-	-
Civic and public affairs	-	-
Nothing specific	1	1
No response	85	94

Types of Adult Education Received - Independent Study		
White collar vocational	18	9
Other vocational course	4	5
Arts, crafts, hobbies and sports	8	6
Household skills	4	2
Liberal arts	8	7
Religion	1	3
Civic and public affairs	1	1
Nothing specific	4	3
No response	50	64

Types of Adult Education Received -- Other	San Mateo	Fresno
White collar vocational	6	1
Other vocational course	-	1
Arts, crafts, hobbies and sports	3	2
Household skills	2	1
Liberal arts	1	-
Religion	-	-
Civic and public affairs	-	1
Nothing specific	8	5
No response	79	89

Fresno: There has been a lot of talk about new inventions that will greatly change our communication systems and our educational systems. Can you think of any recent inventions or developments that are likely to have this effect? What inventions or developments are you thinking of?

Types of New Developments Affecting Communications or Education	
UHF Television	-
Communication satellites	19
Computers	3
Teaching machines	3
Miscellaneous -- business machines	2
Miscellaneous -- space developments	9
Miscellaneous -- education	14
Miscellaneous -- communications	6
No response or uncodable response	43

Fresno: There has been a lot of talk about new inventions that will greatly change our communication systems and our educational systems. Can you think of any recent inventions or developments that are likely to have this effect? What changes do you expect to see?

Changes from New Development Affecting Communications or Education	
Change for the worse	4
Improve international relations	2
Quality of the medium	12
Education -- qualitative	4
Education -- Quantitative	5
Content -- qualitative	1
Content -- quantitative	9
No change	2
Uncodable response	11
No response	48

Fresno: What about UHF television? What changes would you expect when more UHF stations are on the air across the country?

Changes from UHF Television	San Mateo	Fresno
Change for the worse		3
Improve international relations		-
Quality of the medium		5
Education -- qualitative		1
Education -- quantitative		7
Content -- qualitative		7
Content -- quantitative		9
No change		4
Uncodable response		4
No response		61

Fresno: What about communication satellites? Do you expect to benefit from communication satellites? How?

Changes from Communication Satellites		
Change for the worse		3
Improve international relations		6
Quality of the medium		7
Education -- qualitative		2
Education -- quantitative		2
Content -- qualitative		3
Content -- quantitative		29
No change		1
Uncodable response		12
No response		34

Fresno: What about computers? Do you foresee any changes in communication or education now that computers are coming into general use?

Changes from Computers		
Change for the worse		12
Improve international relations		-
Quality of the medium		19
Education -- qualitative		1
Education -- quantitative		1
Content -- qualitative		1
Content -- quantitative		3
No change		1
Uncodable response		17
No response		43

Fresno: What about teaching machines? What advantages might teaching machines possess?

Changes from Teaching Machines	San Mateo	Fresno
Change for the worse		9
Improve international relations		-
Quality of the medium		13
Education -- qualitative		7
Education -- quantitative		7
Content -- qualitative		-
Content -- quantitative		-
No change		3
Uncodable response		10
No response		51

San Mateo and Fresno: In what ways do you think your life today is different from what it was five years ago?

Perception of Change Over Past Five Years (General)		
Positive change	28	
Neutral or no change	62	
Negative change	9	
Don't know or no response	1	

Perception of Change Over Past Five Years (Specific)		
Individual change -- neutral		18
General -- progress or betterment		4
General -- disintegration or cataclysm		3
General -- neutral		5
Material environment -- positive change		14
Material environment -- negative change		4
Psychological -- positive change		16
Psychological -- negative change		5
Personal -- positive change		9
Personal -- negative change		5
No change		13
Don't know or no response		3

San Mateo and Fresno: What changes do you expect in the next five years of your life?

Perception of Change in Next Five Years (General)		
Positive change	32	
Neutral or no change	54	
Negative change	3	
Don't know or no response	11	

Perception of Change Over Next Five Years (Specific)	San Mateo	Fresno
Individual change -- neutral	13	
General -- progress or betterment	5	
General -- disintegration or cataclysm	3	
General -- neutral	4	
Material environment -- positive change	18	
Material environment -- negative change	-	
Psychological -- positive change	11	
Psychological -- negative change	1	
Personal -- positive change	8	
Personal -- negative change	3	
No change	17	
Don't know or no response	16	

San Mateo and Fresno: Can you think of anything you're doing right now that will affect your life five years from now? (What?)

Evaluation of Present Activity Affecting Future		
Nothing	49	49
Activity involving social advancement	19	14
General personal activity or natural change	24	31
No response or uncodable response	8	7

San Mateo and Fresno: Each person regards certain occupations more favorably than others. From your point of view, what makes an occupation a good occupation?

Attributes of a Good Occupation		
Gratification	64	56
Worthwhile service for others	4	5
Challenging, interesting, or growing	15	15
Competence or suitability	5	7
Salary, benefits, security, or prestige	5	8
No response or uncodable response	6	9

San Mateo: How important do you think it is to work hard at everything you do?

Importance of Hard Work	
Extremely	51
Quite, somewhat, or not at all	47
No response or uncodable response	2

San Mateo: How important is it for you to master everything that you set out to do?

Importance of Mastery	San Mateo	Fresno
Extremely	44	
Quite	31	
Somewhat or not at all	23	
No response or uncodable response	2	

San Mateo: When you set out to do something and it doesn't go right, what would you say is usually the matter?

Placement of Blame for Personal Failure		
External factors or self, beyond immediate control	59	
Self, under immediate control	38	
No response	3	

San Mateo and Fresno: Are you married?

Marital Status		
Single	9	7
Married	72	68
Widowed	11	13
Separated or divorced	7	11

Fresno: What type of work does your husband do?

Husband's Occupation		
Professional or technical		3
Manager -- large business or corporation executive		-
Manager -- small business or departmental head		8
White collar		4
Blue collar -- skilled		9
Blue collar -- semi-skilled or unskilled		9
Farmer		-
Never worked		3
No response		61

San Mateo and Fresno: Do you have any children? (OR) How many children do you have?

Number of Children		
None	22	12
One	19	16
Two	26	27
Three	19	19
Four or more	18	19
No response	3	7

San Mateo: Do you have any children of school age or under? Have you considered how much education you would like (him, her, them) to receive?

Education Desired for Children	San Mateo	Fresno
Less than four years of college	5	
Four years of college or more	41	
No, no response, or don't know	54	

San Mateo: Have any of your children finished school? What was the last year (he, she, they) completed?

Education Completed by Children No Longer in School		
Less than four years of college	19	
Four years of college or more	14	
No, no response, or don't know	66	

San Mateo: How much education would you have wished (him, her, them) to receive?

Education Desired for Children No Longer in School		
Less than four years of college	5	
Four years of college or more	27	
No, no response, or don't know	68	

San Mateo and Fresno: How long have you lived in [name of city]?

Residence in City		
5 years or less	40	20
More than 5 years	60	80

San Mateo: People often think of themselves as belonging to a social class. How would you describe the social class to which you belong?

Rationale for Placement in Social Class		
Education, independently or in combination with other elements	14	
Occupation or income	22	
Social affiliation	6	
Social affiliation combined with occupation or income	3	
Objection or refusal	9	
No rationale for placement	27	
No response or uncodable response	20	

San Mateo: Would you say you belong to the upper class, the middle class, or the working class?

Placement in Social Class	San Mateo	Fresno
Upper class	6	
Middle class	71	
Working class	17	
No response or don't know	6	

San Mateo: Would you say that you are in the same social class as your parents?

Comparison with Parents' Social Class		
No obvious difference or comparison impossible	53	
Respondent higher	33	
Parents higher	13	
No response	1	

San Mateo and Fresno: What kind of work did your father do when you were a child?

Father's Occupation		
Professional, managerial, or white collar	54	25
Blue collar or farmer	43	70
No response	2	4

San Mateo and Fresno: What was the last year your father completed in school?

Father's Education		
Less than high school graduate	31	48
High school graduate	18	8
More than high school	22	11
No response or don't know	29	32

San Mateo: Did your parents ever say how much schooling they wanted _you_ to complete? How much?

Education Desired by Parents for Respondent		
Less than four years of college	26	
Four years of college or more	41	
No response or "They never said"	32	

San Mateo and Fresno: What is your age?

Age		
18 to 39 years	34	40
40 to 59 years	42	37
60 to 99 years	24	23

San Mateo: What is your religious affiliation or preference

Religious Affiliation or Preference	San Mateo	Fresno
Catholic	33	
Jewish	2	
Protestant	58	
Other	2	
None or no response	4	

San Mateo and Fresno: On this card are listed some general family income brackets. Would you name the letter on the card that identifies the general bracket of your entire family income before taxes?

Income Before Taxes		
$6,999 or less	31	62
$7,000 to 9,999	27	20
$10,000 to 14,999	25	14
$15,000 or more	17	4

Source of Response to Income Question		
Respondent's answer	85	88
Interviewer's estimate - refusal	14	11

Race		
White	93	81
Mexican-American	1	9
Negro	3	8
Oriental	3	1

Sex		
Male	40	36
Female	60	64

APPENDIX III

Intrahousehold Sampling Table

The table on the following page is the 24th of 60 versions of a computer-generated sampling table prepared for these surveys. One of the 60 versions (randomly selected) was included as the second page of each interview schedule.

For a detailed discussion of the derivation and use of this sampling table, see William J. Paisley and Edwin B. Parker, A computer-generated sampling table for selecting respondents within households, Public Opinion Quarterly, 1965, 29, 431-436.

FIRST, WOULD YOU TELL ME HOW MANY PERSONS IN YOUR HOME ARE OVER 18 AND NO LONGER IN SCHOOL -- (CIRCLE NUMBER IN FIRST COLUMN BELOW)

HOW MANY OF THEM ARE WOMEN -- (CIRCLE NUMBER IN SECOND COLUMN BELOW)

NUMBER OF PERSONS IN HOUSEHOLD OVER 18, NOT IN SCHOOL	NUMBER OF WOMEN IN HOUSEHOLD OVER 18, NOT IN SCHOOL	YOU SHOULD INTERVIEW THE
1	0	MAN
	1	WOMAN
2	0	OLDER MAN
	1	WOMAN
	2	OLDER WOMAN
3	0	OLDEST MAN
	1	OLDER MAN
	2	OLDER WOMAN
	3	OLDEST WOMAN
4	0	OLDEST MAN
	1	OLDEST MAN
	2	OLDER MAN
	3	OLDEST WOMAN
	4	OLDEST WOMAN
5 OR MORE	0	SECOND-OLDEST MAN
	1	SECOND-OLDEST MAN
	2	SECOND-OLDEST MAN
	3	YOUNGER MAN
	4	OLDEST WOMAN
	5 OR MORE	SECOND-OLDEST WOMAN

THEN, ACCORDING TO MY INSTRUCTIONS, I'M SUPPOSED TO INTERVIEW THE (PERSON INDICATED ABOVE). IS (HE,SHE) AVAILABLE NOW --

(IF PERSON TO BE INTERVIEWED IS NOT AT HOME OR NOT AVAILABLE, SCHEDULE A LATER APPOINTMENT -- DAY .... TIME ....)

APPENDIX IV

A Method of Analyzing Coding Reliability:
The Random-Systematic-Error Coefficient[1]

Introduction

In processing data from questionnaire or interview items it is often expedient to assign each response to one of a set of categories, each of which is exclusive of the others and all of which taken together are exhaustive of all possible responses to the respective item. Data thus categorized are more amenable to tabulation, interpretation and statistical analysis. Such a set of categories is called a code, and the process of assigning item responses to the categories of a code is called coding.

When there are hundreds of interviews or questionnaires to be processed, demands of time may require using a number of coders, some of whom may code responses to the same items in different sets of questionnaires. Ideally, two coders should assign a set of responses to the same categories, in which case the coding operation would be completely reliable. Actually, because of personal quirks and biases in coders and ambiguities in codes, such perfect agreement is rare. However, well-trained coders using a well-constructed code should be able to maintain a reasonably high level (greater than 85 per cent) of reliability in a coding operation.

This paper describes a procedure that may help increase the reliability of a coding operation. By using the Random-Systematic-Error (RSE) coefficient, the survey administrator may be able to determine, in cases of low reliability, whether the fault lies in the code or in the coders.

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[1] This appendix was prepared by G. Ray Funkhouser and Edwin B. Parker.

APPENDIX IV/2

Background

Woodward and Franzen (1948) reported a study in which they found that the training and instruction of coders can improve coding reliability. One year later, Kaplan and Goldsen (1949) contributed a chapter to Language of Politics in which they demonstrated that intensive training of analysts and detailed rules for classifying items into categories can significantly increase the reliability of content analysis of (their example) newspaper headlines.

A later article published by Bennett, Alpert and Goldstein (1954) noted that a certain percentage of agreement between coders is likely simply on the basis of the number of categories in the code being used. They presented a formula to correct for this. Scott (1955) subsequently pointed out that since their formula assumed equal distribution of responses in all categories of the code it would not hold for most behavioral or attitudinal research. He therefore proposed a formula to further refine the correction for chance coder agreement.

Scott's formula gives the most stringent test of coding reliability currently available. Even in the case of interval data, whose coding accuracy may be checked by correlational methods (see Danielson, 1963), the Scott formula provides more certainty of the correlation between two coders' work than does a correlational approach measure the extent of coder agreement. This is because small discrepancies do constitute disagreements in the Scott formula but do not greatly reduce the size of a correlation coefficient.

Sources and Nature of Coder Disagreement

Coding disagreements may stem from two sources, the code and the coders. If the categories of a code are poorly defined, overlapping, ambiguous or inexhaustive of all responses, coders may disagree because there is no clearly correct category for some of the responses. On the other hand, because of personality differences or differential training, one coder may assign one subset of responses to one category while a different coder assigns it to another.

Disagreements between two coders using the same code on the same set of responses may be analyzed to indicate their source and the corrective measures to be taken. Errors resulting from a defective code (for example, an ambiguous code) seem generally to be scattered about the range of possible disagreements, while errors originating in the coders tend to fall into systematic patterns.

For example, one coder may assign a subset of responses to one category, while the other coder assigns it to another (a "single-cell" disagreement); or one coder may use a general category (e.g., "miscellaneous") for a subset of responses among which the other coder makes finer distinctions (a "marginal" disagreement). If the disagreements are the fault of the code, reliability may be improved by reconstructing or redefining the code to accomodate them. And if the coders are causing the trouble, reliability may be increased by giving them more training or by hiring more competent ones.

The RSE coefficient may be used to facilitate this sort of analysis. Given two coders coding the same set of responses, their judgments are entered into a two-dimensional matrix, the cells of which represent the possible combinations of categories. Thus (3,3) represents an agreement between the coders when a response belongs in category 3, while (2,3) means that one coder assigned a response to category 2 which the other assigned to category 3. In figure 1, coder agreements fall on the dashed-line diagonal, and disagreements are represented by the other cells. The "6" in cell (3,3) means that 6 responses were coded by both coders as belonging in category 3, and the "4" in cell (1,2) indicates that there were 4 responses which one coder categorized as "1" and the other as "2".

Letting N represent the number of responses in any cell, not on the coder-agreement diagonal, we can formulate the first approach to the RSE coefficient as: $\lesssim N^2 / \lesssim N$. The maximum value of this relation occurs when all disagreements fall in the same cell (or category), and is equal to $\lesssim N$. The minimum value occurs when each disagreement is in a different cell (or category), and is 1.00. In some cases there are more disagreements than there are different categories or cells in which they can fall, and then the minimum value may be approximated by $\lesssim N / c$, where c is the number of cells (or categories). In general, since there may be fewer cells than disagreements, let $C = \min(\lesssim N, c)$.

There are two approaches to an RSE analysis. In the Office of Education survey it was found empirically that if $\lesssim N^2 / \lesssim N$ is computed for a coder-disagreement matrix, random error may be distinguished from systematic error by adding 3.0 to the minimum value for the matrix ($\lesssim N / C$). A value higher than $\lesssim N/C + 3.0$ appeared to indicate that disagreements are falling into systematic patterns.

It is possible to define the coefficient so as to give it a natural minimum value of zero by subtracting its calculated minimum value: $\lesssim N^2 / \lesssim N - \lesssim N / C$. By then dividing this quantity by its own maximum value and extracting the square root so as to spread out the distribution, we have:

$$RSE = \sqrt{\frac{C \lesssim N^2 - (\lesssim N)^2}{(\lesssim N)^2 \, (C - 1)}}$$

which gives a coefficient with a range of 0.00 to 1.00.

It can be shown that the quantity under the square root sign is identical with chi square divided by the maximum value of chi square. Chi square could be calculated by omitting the diagonal (agreement) cells of the matrix, by assuming the errors are distributed evenly throughout the remaining cells, and then calculating the deviation from this expectation. Thus the statistical significance of a deviation from random error distribution could, in principle, be tested by way of chi square. In practice, the expected values in the cells are usually too small to meet the chi square assumption of normal distributions of observed responses with a mean at the expected value.

Another approach to a statistical significance test would be to generate random distributions and observe what percentage of the time each value of the RSE coefficient is obtained. This was done for each of the 200 pairs of values of C and N presented in Table 1. For each cell in the table, 100 random distributions of "coding errors" were generated with a pseudo-random number procedure. The RSE coefficient for each of these 20,000 distributions was calculated. The value of the RSE presented in the table is that value separating the 99th from the 100th largest RSE in each cell. This can be taken to represent the .01 point in the distribution of RSE coefficients under the assumption that errors are distributed randomly. In other words, with RSE coefficients this large or larger we could reject the hypothesis of randomness and accept the hypothesis of systematic error at the $p = .01$ level of confidence. To provide a completely reliable significance test table by way of randomly generated distributions would require many more than the 100 distributions per cell used here. However, the results of this analysis are apparently quite stable, as evidenced by the relatively few reversals in the empirical results presented in Table 1.

The values in Table 1 differentiate between real instances of random and systematic coding error identically to the demarcation range established in the approximation method above. This indicates that either approach might be used to analyze coding error. The approximation is simpler for non-computer calculations.

There are three sources from which systematic disagreement may arise. The two coders may disagree on the category of a given type of response, or either of the two coders may systematically misuse one (or more) categories. Thus it is useful to compute three different RSE coefficients in a coding reliability analysis:

1. RSE, cells	--	based on disagreements in the individual cells of the matrix (c = # of cells - # of categories)
2. RSE, X margin	--	based on disagreements involving each category with respect to coder X (c = # of categories)
3. RSE, Y margin	--	based on disagreements involving each category with respect to coder Y (c = # of categories).

For the latter two computations, N is made equal to the number of disagreements, with respect to each coder, falling in each category.

An RSE analysis and its interpretation by either approach would proceed as follows:

1. Compute RSEs for single cells and for X and Y margins.
2. If RSE cells is above the demarcation point, disagreements are systematically falling into single cells, and may be the result of the coders' disagreeing over a particular type of response.
3. If either marginal RSE is above the demarcation point, disagreements are systematically falling into categories with respect to one coder or the other, and may result from a misuse or misinterpretation of the code.

4. If both marginal RSEs are high, it may be an artifact of a high RSE cells, or it may indicate that both coders are making systematic errors.
5. If all three RSEs are below their demarcation points, disagreements are randomly scattered, and the fault more than likely lies in a defective code.

As an example of an RSE analysis, refer to the matrix in figure 1. For single cells,

$\Sigma N^2 = 27$, $\Sigma N = 11$, $C = 11$, and $RSE = .381$

For the X margin,

$\Sigma N^2 = 83$, $\Sigma N = 11$, $C = 11$, and $RSE = .809$

For the Y margin,

$\Sigma N^2 = 33$, $\Sigma N = 11$, $C = 11$, and $RSE = .447$

Referring to table 1, we find that for N = 11, C = 11, the point of demarcation is between .45 and .50. Thus the X margin RSE is highly systematic, while the other two are not. The interview item in this case was: "During the past month, do you remember asking an 'expert' for information of any kind?" Category 1 was "work expert". Categories 2,4,6 and 9 were "wealth expert", "home care and mechanical expert", "scientific expert" and "miscellaneous", respectively. This source of disagreement was corrected by making it clear to coder Y (coder X was correctly using category 1) that "work expert" meant a boss or supervisor on the job, and that doubtful cases might be clarified by checking the respondent's occupation.

By the simpler approximation first used, $\Sigma N^2 / \Sigma N = 2.455$, 7.545 and 3.000 for single cells, X margin and Y margin, respectively. In all three cases $\Sigma N / C = 1.00$, and the demarcation point is therefore 4.00. Again, only the X margin is systematic.

The RSE analysis, then, may be useful in determining the nature and source of disagreement in coding operations where it is feasible to have two coders code the same set of responses. It is a simple method to use, and can be included in the same computer procedure that calculates the extent of coder agreement (preferably based on Scott's pi formula) as the initial test of reliability. Most importantly, it improves on the administrator's intuition in maintaining the reliability of a coding operation.

The following examples are taken from the analysis of interview items whose coding reliability was unacceptably low (< .85):

Item A-6

"What would you say are some of the reasons why you read magazines?"

	RSE	C	≤ N
pi = .817			
RSE, Single Cells	.182	14	14
RSE_x margin	.340	10	14
RSE_y margin	.323	10	14

Comment: An ambiguous code. Intially gave rise to random disagreement, and was improved by subsequent redefinition of categories.

Item A-13

"Would you tell me the titles or authors of any books you have read during the past month?"

	RSE	C	≤ N
pi = .363			
RSE, Single Cells	.574	96	96
RSE_x margin	.662	11	96
RSE_y margin	.661	11	96

Comment: This code categorized books in rough accordance with the Dewey Decimal System, and was therefore extremely ambiguous. To make matters worse, coder X left books he was uncertain of uncategorized (equivalent to an "X") while coder Y scored them as "miscellaneous" ("0"), producing 54 out of 86 errors in cell (X,0).

Item A-20

"During the past month, do you remember asking an 'expert' for information of any kind? What kind of 'expert' was that?"

1st Analysis:

	RSE	C	≤ N
pi = .405			
RSE, single cells	.837	25	25
RSE_x margin	.827	11	25
RSE_y margin	.829	11	25

Comment: Because one coder interpreted "No expert" as "No response", there were 21 out of 25 errors in cell (0,X).

2nd Analysis:

	RSE	C	≤ N
pi = .722			
RSE, single cells	.381	11	11
RSE_x margin	.809	11	11
RSE_y margin	.447	11	11

Comment: Error in 1st analysis rectified. In this analysis, coder X was correctly using a category which coder Y misunderstood. Hence, 9 out of 11 disagreements fell in category 1 for coder X.

Item E-1

"What kinds of subjects do you usually think of in connection with adult evening classes?"

	RSE	C	≤ N
pi = .751			
RSE, single cells	.167	42	42
RSE_x margin	.291	11	42
RSE_y margin	.347	11	42

Comment: Moderately high systematic error for both coders. For coder X, 12 out of 42 disagreements were in category 3, 8 out of 42 in category 7. For coder Y, 8, 9 and 13 disagreements were in categories 1, 7, and 0, respectively.

Item F-1

"In what ways do you think your life today is different from what it was five years ago?"

1st Analysis:

pi = .611	RSE	C	≤ N
RSE, single cells	.294	26	26
$\text{RSE}_{x\ \text{margin}}$	.335	10	26
$\text{RSE}_{y\ \text{margin}}$	.494	10	26

Comment: This was a difficult code. In this analysis error was largely systematic, 13 out of 24 disagreements falling in category 4 for coder Y and 8 out of 24 falling in category 1 for coder X.

2nd Analysis:

pi = .832

RSE, single cells	.174	12	12
$\text{RSE}_{x\ \text{margin}}$	.478	10	12
$\text{RSE}_{y\ \text{margin}}$	.299	10	12

Comment: An improvement over the 1st analysis, but coder X is still using category 4 where coder Y is not.

Item F-2

"What changes in your life do you expect in the *next* five years?"

1st Analysis:

pi = .728

RSE, single cells	.324	21	21
$\text{RSE}_{x\ \text{margin}}$	.383	11	21
$\text{RSE}_{y\ \text{margin}}$	.545	11	21

Comment: Code similar to that of F-1, same coders--and apparently the same sort of error (12 out of 21 disagreements fell into category 4 for coder Y, 8 out of 21 in category 1 for coder X).

2nd Analysis:

	RSE	C	≤ N
pi = .938			
RSE, single cells	.316	5	5
RSE_x margin	.456	5	5
RSE_y margin	.456	5	5

Comment: Marked improvement over the 1st analysis, although the number of cases is too small (50 responses check-coded) to be of real significance. Disagreement random now.

Item F-3

"Can you think of anything you're doing right now that will affect your life five years from now? (What?)

	RSE	C	≤ N
pi = .706			
RSE, single cells	.420	18	18
RSE_x margin	.596	4	18
RSE_y margin	.479	4	18

Comment: Combination of systematic cell and category error. 2 cells--(1,2) and (1,3)--with 5 out of 18 disagreements each. 10 out of 18 disagreements in category 1 for coder X, 9 in category 3 for coder Y.

Table 1

Upper Limit of Second Highest Value of 100 RSE Coefficients

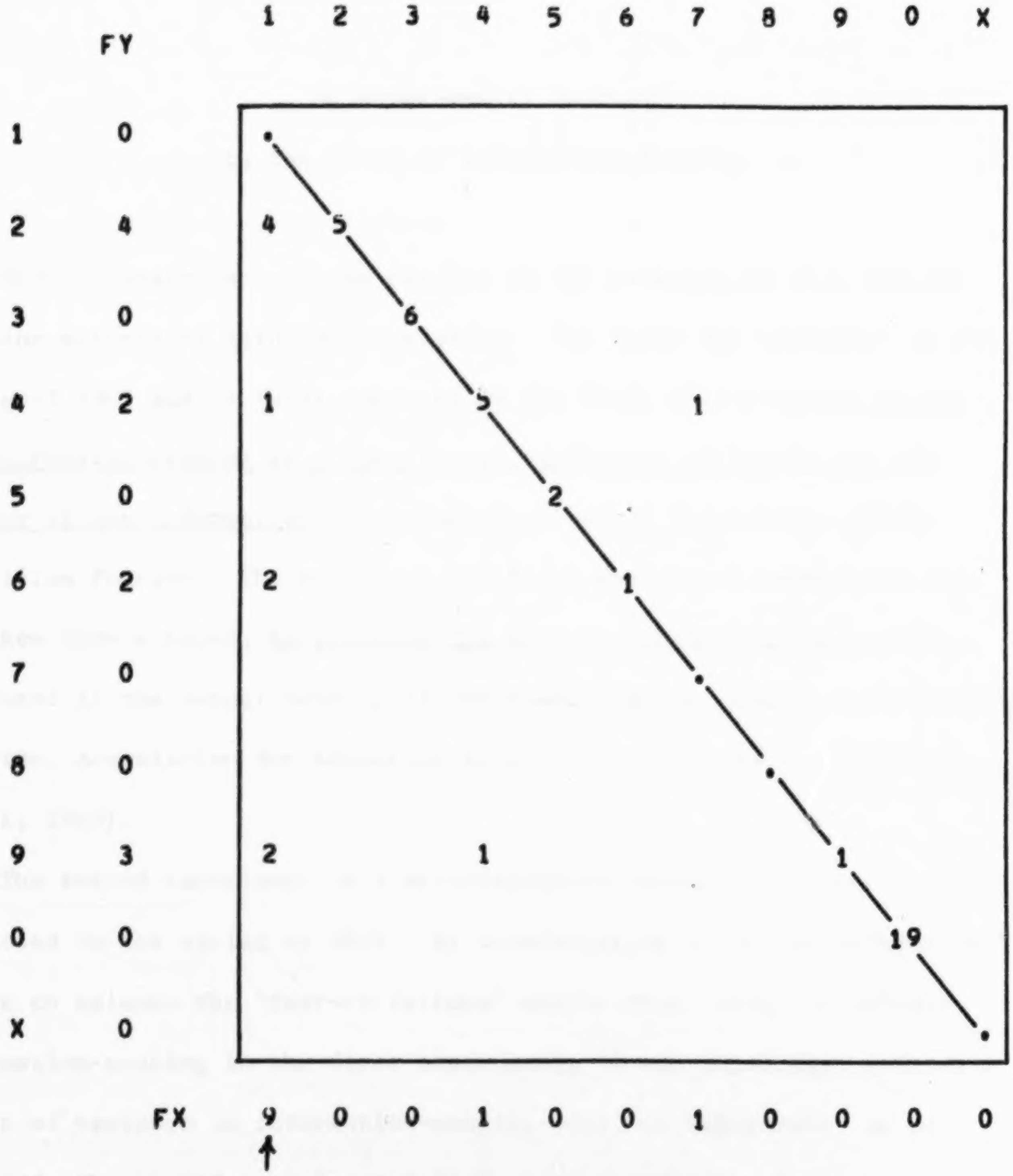
Obtained from Random Distributions in each of 200 Pairs of C and N

(i.e. values where p = .01)

N (Total Number of Disagreements)	C (Number of Available Cells or Categories)														
	2	3	4	5	6	7	8	9	10	15	20	25	30	40	50
100	.25	.20	.20	.20	.20	.20	.20	.20	.20	.15	.15	.15	.15	.15	.15
90	.30	.25	.25	.20	.20	.20	.20	.20	.20	.20	.15	.15	.15	.15	.15
80	.35	.25	.25	.20	.20	.20	.20	.20	.20	.20	.15	.15	.15	.15	.15
70	.30	.25	.25	.25	.25	.20	.25	.20	.20	.20	.20	.15	.15	.20	.15
60	.35	.25	.25	.25	.25	.25	.20	.25	.20	.20	.20	.20	.20	.20	.15
50	.35	.30	.30	.30	.30	.20	.25	.25	.25	.20	.20	.20	.20	.20	.20
40	.45	.35	.30	.30	.30	.30	.30	.25	.25	.25	.25	.25	.25	.20	-
35	.45	.35	.35	.30	.35	.30	.30	.30	.30	.25	.25	.25	.25	-	-
30	.50	.40	.40	.35	.35	.30	.35	.30	.30	.25	.25	.25	.25	-	-
25	.45	.45	.40	.35	.35	.35	.35	.35	.35	.30	.30	.30	-	-	-
20	.45	.45	.40	.40	.40	.35	.35	.40	.35	.35	.35	-	-	-	-
18	.45	.55	.45	.40	.35	.40	.40	.40	.35	.35	-	-	-	-	-
16	.55	.45	.45	.45	.40	.45	.40	.40	.45	.40	-	-	-	-	-
14	.60	.55	.55	.45	.45	.40	.45	.40	.45	-	-	-	-	-	-
12	.70	.65	.60	.55	.50	.50	.55	.50	.45	-	-	-	-	-	-
10	.65	.60	.55	.55	.55	.55	.55	.50	.50	-	-	-	-	-	-

Figure 1.

THIS MATRIX REPRESENTS AN ANALYSIS OF THE JUDGMENTS OF TWO CODERS, X AND Y, INDEPENDENTLY CODING A SET OF QUESTIONNAIRE RESPONSES.



	FY	1	2	3	4	5	6	7	8	9	0	X
1	0	.										
2	4	4	5									
3	0			6								
4	2	1			5			1				
5	0					2						
6	2	2					1					
7	0							.				
8	0								.			
9	3	2			1					1		
0	0										19	
X	0											.
FX		9	0	0	1	0	0	1	0	0	0	0

FX = FREQUENCY OF DISAGREEMENTS IN COLUMN X
FY = FREQUENCY OF DISAGREEMENTS IN ROW Y

N = 50
Percent Agreement = 0.780
Number of disagreements = 11
Pi = 0.722

	$\Sigma N^2/\Sigma N$	RSE
Single Cells	2.455	.381
X Margin (Columns)	7.545	.809
Y Margin (Rows)	3.000	.447

APPENDIX V

An Experimental Approach
to the Study of Information-Seeking

This appendix reports the results of two experiments that focused upon the motives of information-seeking. The first was conducted in the spring of 1965 and is fully reported in the Ph.D. dissertation, Extent of information-seeking as a function of subjective certainty and the utility of the information (unpublished, Stanford University, 1965), by William Paisley. The report of the first experiment reproduced here is taken from a paper, Researching the motives of information-seeking, delivered at the annual meeting of the Communication Theory and Methodology Division, Association for Education in Journalism (Syracuse, New York; August, 1965).

The second experiment is a methodological variation of the first, conducted in the spring of 1966. By incorporating a "desire-for-success" motive to balance the "fear-of-failure" motive that seemed to inhibit information-seeking in the first experiment, it was hoped that a greater amount of variance in information-seeking could be explained. As it happened, the second experiment failed, largely because of procedural constraints on the subjects. Details of this experiment and its outcome are reported in a research note prepared for this appendix.

APPENDIX V/2

RESEARCHING THE MOTIVES OF INFORMATION-SEEKING

People differ in the amount of information they seek on any topic, and each person seeks more information on some topics than on others. People differ further in their choice of information sources. Four assumptions guide the investigation of such differences:

(1) A person is free to seek as much or as little information as he chooses.

(2) Information-seeking is an instrumental behavior -- that is, its occurrence is contingent on anticipated reward.

(3) The amount of information sought is a function of the amount of reward anticipated.

(4) The choice of an information source is a function of the reward potential of information from that source.

Given these assumptions, it must be concluded that people perceive different reward potentials in situations that lead to different amounts of information-seeking. Furthermore, people perceive different reward potentials in information emanating from preferred and nonpreferred sources.

Defining information broadly, in the information-theory sense (i.e., any message reaching the receiver), the act of attending to the mass media may be construed as information-seeking, together with interrogation of other people and interrogation (observation, surveillance) of the environment. From this perspective the receiver is viewed as an information-seeker whether he attends to a news broadcast or to a situation comedy.

In either case he takes in messages to make use of them in some way. To paraphrase the second assumption above, the act of attending to communication is never unmotivated.

In the past, the motivations of information-seeking -- in particular, use of the mass media -- have been approached in three ways: (1) by non-empirical analysis of the "functions" of the media in society, (2) by non-empirical extension of learning theory, (3) by general-population survey of "reasons", "functions", or "motives" underlying media use. The first approach is exemplified by the functional analyses of Lasswell (1948), Lazarsfeld and Merton (1948), and Wright (1960). Wright alone deals at length with an individual's motives for attending to the media, but expresses them in terms of such functions as "provides warning", "aids integration: exposure to common norms", and "provides respite".

The second approach differs from the first principally in terminology. Instead of serving a function, the media are said to provide reinforcement. Schramm (1949) asserts a general motive of drive-reduction in media use, grounding his discussion in Mowrer's theory of learning (1950). His distinction between "immediate reward" and "delayed reward" corresponds to the functionalist's distinction between "respite" and "warning". Staats and Staats (1963) emphasize signs of operant conditioning in media use (cf. Skinner, 1938) and suggest numerous reinforcers present in the user-media transaction.

The third approach, most pertinent to this discussion because of its empirical base, borrows the language either of functionalism or of learning theory. Thus Herzog (1944) identifies three gratifications in daily radio serial listening, as mentioned by her sample of 100 listeners: (1) serials provide emotional release, (2) serials afford an opportunity for wishful thinking, (3) serials suggest ways of handling family problems.

In another representative study Berelson (1949) interviewed 60 New Yorkers deprived of their daily newspaper by a strike and inferred the functions of newspapers from what respondents said they missed: (1) newspapers provide information about and interpretation of public affairs, (2) newspapers are tools for daily living (i.e., guides to the day's events and means of scheduling activities), (3) newspapers provide respite, (4) newspapers enhance social prestige by enabling readers to appear informed in conversation, (5) newspapers provide vicarious social contact, (6) newspapers, simply as texts to be read, enhance self-esteem of readers who feel that reading itself is a prestigious activity, (7) newspapers provide an excuse for ritualistic or near-compulsive reading, an anxiety-reducing habit.

All three approaches imply that a given act of information-seeking may be the product of multiple interacting motives. Thus the newspaper may provide both warning and respite. If the reader expects both, then perhaps both his "motive to be warned" and his "motive to obtain respite" come into play. If an investigator would like to assess the strength of each motive (somehow holding other motives constant), such confounding of motives leaves him with an unenviable problem.

In practice the presence of multiple motives forces certain assumptions upon the analysis. In a recent survey concerning adult information-seeking, we found that multiple "reasons" for using each medium were expressed by

52 per cent of the television viewers, 55 per cent of the radio listeners, 56 per cent of the magazine readers and book readers, and 58 per cent of the newspaper readers. To infer the dominant motive in each case we must assume either (1) that a respondent's response hierarchy of expressed motives corresponds to the latent hierarchy of motives themselves (i.e., first mentioned = strongest) or (2) that the stressed motive (i.e., most elaborated motive) is dominant. Our confidence in either assumption is undermined by our knowledge that socially disapproved motives, however strong, are seldom mentioned first and seldom emphasized. Then, even if respondents mention motives without regard for social acceptability, we face the further possibility that they are convinced by their own rationalizations and quite ignorant of latent motives.

Perhaps a more promising approach to the study of information-seeking motives is the behavioral experiment. Three serious defects of survey investigation of motives -- lack of control over complex information-seeking acts, dependence on self-report of motives, and the indeterminate strengths of multiple motives -- may be eliminated in the laboratory by simplifying and regulating the information-seeking act, by arousing specific motives through experimental induction, and by utilizing a factorial design in which the independent effect of each motive can be tested.

Past experimental study of information-seeking motives, rooted in game theory, has been concerned with the amount of information people seek when the information is not free and when certain utilities are contingent upon decisions based upon the information. For example, Irwin and Smith (1957) permitted subjects to seek information from a deck of cards, one card at a time, and required them to guess whether the mean of the numbers on the cards was above or below zero. The dependent variable was the number of cards inspected before each decision. The motive for seeking information was ostensibly a cash payoff for correct decisions. Irwin and Smith found a significant difference in amount of information-seeking attributable to the payoff, but differences attributable to the difficulty of each problem and to subjects' idiosyncratic strategies were much more significant. The results of this experiment are summarized in Table 1.

Lanzetta and Kanareff (1962) permitted subjects to request from one to five units of information before reaching a payoff-contingent decision. The task in their experiment was that of deciding whether an hypothetical mental patient should be discharged from a mental hospital. The units of information, presented on separate slips of paper, reported recent observations of his behavior. The results of this experiment are also summarized in Table 1.

Ward Edwards, summarizing these findings in a review article (1962), notes three major findings: "large and consistent individual differences; sensitivity of strategy to manipulation of costs, payoffs, and probabilities; a general tendency to seek too much information." Individual differences are mentioned first, and deserve to be, since they were the primary source of variation in each experiment.

These investigators regard the between-subjects difference as a function of idiosyncratic strategy, a certain "style" of information-seeking. Although data are lacking, Lanzetta and Kanareff speculate about personality correlates such as those studied in gambling situations by Scodel, Ratoosh, and Minas (1959). They suggest that some people are "rationalists",

Table 1

Summary of Results of the Irwin-Smith and Lanzetta-Kanareff Experiments

Source of Variation	Irwin-Smith	Lanzetta-Kanareff
Payoff (motivational induction)	$p < .05$	$p < .05$
Problem Difficulty	$p < .001$	-
Between Subjects	$p < .001$[a]	$p < .001$[b]
Practice Effect	-	$p < .01$

[a] Actually, the obtained F was 16 times larger than necessary for significance at the .001 level.

[b] The obtained F was 10 times larger than necessary for significance at the .001 level.

motivated by a need to reduce uncertainty, while others are "pragmatists", concerned about the payoff.

Explanation in terms of such personality traits is explanation by default. It is also circular: a pragmatist is a pragmatist because he seeks just enough information to secure the payoff and no more. Although game theorists prefer a two-factor explanation in which behavior is determined by utility (in this instance, cash payoff) and by probabilities inherent in the problem, we may speculate what other motives may have been aroused in these experiments, such that subjects perceiving the situation differently would have been motivated to seek different amounts of information.

The first point to be noted is that the amounts of money subjects could gain in these experiments were trivial. In the Lanzetta and Kanareff experiment each subject was permitted to spend three minutes to reach a decision to win a nickel -- a probable average payoff of less than $1.00 per hour, below the minimum wage. Irwin and Smith offered larger prizes of $.50 and $1.00 (gross: minus 1/2 cent or 1 cent for each card inspected), but their motivation induction also seems to have been weak.

If the payoff was a weak induction, subjects may have been motivated otherwise to seek information. For instance, subjects may have perceived that the decision between right and wrong alternatives reflected on their abilities: they may have become ego-involved in the task. Similarly, the information being processed (e.g., symptoms of mental illness) may have possessed "intrinsic" utility for some subjects; it may have increased knowledge on a topic they felt they might later have to take action on (discourse upon, etc.).

An experiment was conducted in the spring of 1965 in which these motivational factors were explicitly introduced into an information-seeking task. The task required individual sampling of fictitious opinion-poll responses from a scrambled "response listing" to estimate the ratio of responses for and against various questions (identified only by code number). Ego-involvement was manipulated by informing the subjects (Stanford undergraduates) that certain problems in the set tended to be solved better by "high I.Q. students" while, according to a fictitious pretest, other problems apparently did not reflect on the intelligence of the solver. Intrinsic utility was manipulated by warning subjects that they would be required to write reports on what they had learned in the solution of certain problems. Subjects were permitted to sample any number of responses before making an estimate; they could also return to a problem for subsequent resampling if desired. The dependent variable was the number of units of information sought in the solution of each problem.

An effort was made to control statistically for subjective certainty, since a subject can be expected to continue collecting information only while subjective uncertainty remains. Subjective certainty was left uncontrolled in previous experiments and may have contributed to the between-subjects difference.

As hypothesized, the manipulation of ego-involvement and intrinsic utility reduced idiosyncratic variation in amount of information-seeking (see Table 2), while variation attributable to utility increased even without a cash payoff. There was a significant intrinsic utility main effect in the final sampling but not in the first (see Table 3). Subjects apparently used the opportunity to resample as a means of maximizing intrinsic

Table 2

Relative Magnitude of the Utility Mean Square and Between Subjects Mean Square in the Irwin-Smith Experiment and in the Paisley Experiment[a]

	Irwin-Smith	Paisley
Between Subjects (idiosyncrasy)	1248.2	439.2
Utility (induced motivation)	250.2	255.0
Utility/Subjects Ratio	.20	.58

[a] Design of the Lanzetta-Kanareff experiment does not permit a similar comparison.

APPENDIX V/11

Table 3
Paisley Experiment:
Analysis of Variance by Intrinsic Utility
Ego-involvement, and Hardness-Confidence[a]

Source of Variation	df	First Sampling: Mean Square	F	Final Sampling: Mean Square	F
Ego-involvement	1	10638.1	< 1.0	8901.9	< 1.0
Intrinsic Utility	1	25176.7	1.75	77866.9	5.26**
Hardness-Confidence	2	22873.6	1.59	8446.2	< 1.0
E x IU	1	58170.0	4.05**	27118.7	1.83
E x IU x HC	2	4613.7	< 1.0	38241.6	2.58*
Within Replicates	79	14373.5		14802.6	

[a] The dependent variable, units of information sought, has already been adjusted on one measure of subjective certainty, inferred from the closeness of the alternative choices to 50/50. Hardness-confidence is a scale derived from subjects' retrospective judgments of problem difficulty and their confidence in each solution.

*p < .10

**p < .025

utility. The ego-involvement main effect was not significant in either analysis, but ego-involvement interacted significantly with intrinsic utility, with less information-seeking in the condition of high intrinsic utility and high ego-involvement than in the corresponding high-low conditions. First and final information-seeking means by condition are reported in Table 4.

The results raise the question of why high ego-involvement and high intrinsic utility, both hypothesized to motivate information-seeking, should combine to inhibit information-seeking. This interaction is interpretable if high ego-involvement is viewed as high fear of failure and high intrinsic utility is viewed as a high publicity condition because of the report-writing task. Presumably failure would be more costly in self-esteem if the subject were to fail after much rather than little information-seeking, and the prospect of failure would be more threatening in a high publicity condition. There is evidence that subjects judged problems in the high ego-involvement condition to be more difficult, even though problems were rotated through all conditions to eliminate such a problem-difficulty bias. Subjects' judgments in this case are interpreted as rationalizations to permit additional information-seeking without increasing fear of failure -- i.e., a difficult problem deserves more attention even from a "high I.Q. student".

In retrospect, this experiment was defective in inducing only the fear-of-failure component of ego-involvement, a motive likely to inhibit information-seeking, instead of a range of ego-involvement inductions including desire for success. According to Lewinian level-of-aspiration theory (1935), particularly as extended by Atkinsons (1957), if a task

APPENDIX V/13

Table 4

Paisley Experiment:

Information-seeking by Intrinsic Utility and Ego-involvement. First Sample, Final Sample, and Change Due to Resampling[a]

First

		Intrinsic Utility		
		Low	High	Mean
Ego-involvement	Low	473	519	496
	High	505	502	503
	Mean	489	510	

Final

		Intrinsic Utility		
		Low	High	Mean
Ego-involvement	Low	469	523	496
	High	494	512	503
	Mean	482	517	

Change Due to Resampling

	Intrinsic Utility	
	Low	High
Low	- 4	+ 4
High	- 11	+ 10

---

[a] 44 cases per cell. Information-seeking expressed as standard score with mean of 500 and SD of 100.

involves abilities or knowledge that the subject does _not_ claim to possess, he can accept failure with equanimity and not hedge his efforts toward success. In a subsequent experiment desire for success without fear of failure will be induced by implying that an even superior group (Stanford graduate students) performed only moderately well in solving certain problems.

Such experiments as these only begin to deal with the complexities of information-seeking motivation. Cash payoffs, ego-involvement, and intrinsic utility are linked theoretically to the simplest of motives (although they may explain a large number of information-seeking acts). Arousal of other information-seeking motives in the laboratory will require great ingenuity in design. How, for instance, can we explicate, isolate, and test the often-mentioned "curiosity motive"? How can we test the role of the "respite motive" in information-seeking? How can we evaluate Stephenson's "ludenic motive" (1964)?

In designing further experimental tests of information-seeking motives, we can learn from other experiments in which differences in information-seeking, although of secondary interest to the investigator, have been noted. Such experiments reverse the paradigm discussed above; instead of tracing a behavior back to its antecedent motives, they trace a motive forward to its consequent behaviors. In the first type of experiment we insist on a certain behavior, information-seeking, but are willing to entertain many motivational hypotheses. In the second type of experiment a motive is insisted upon but the investigators are willing to consider several behavioral consequences. For instance, research into the effects of cognitive dissonance (Festinger, 1957) begins with an explication of the unitary motive, proceeds to an experimental design in which the motive can be aroused with adequate controls, and observes the behavioral consequences of its arousal. Successful arousal of the motive is paramount and consequent behaviors, "modes of reducing dissonance", are considered somewhat interchangeable.

Such experiments can be instructive if information-seeking happens to be one of the consequent behaviors. Thus the power of cognitive dissonance to affect information-seeking is suggested by Festinger's experiment in which gambling subjects consulted a graph purporting to show the probabilities of winning (1957), by the experiment of Mills, Aronson, and Robinson (1959) in which subjects requested information about an impending examination, and by Adams' experiment (1961) in which mothers of infants requested information supporting or opposing their views on child-rearing.

Occasionally a "backwards" information-seeking experiment may suggest a motive that otherwise might be overlooked. A case in point is Wheeler's experiment (1964) concerning the role of the "power motive" in information-seeking. He found that, in two-person groups in which one person wields more power than the other (by arbitrary induction), the low-power person seeks to learn more about the high-power person but not vice versa. Wheeler infers that such information-seeking represents an effort to equalize power. This finding, coupled with the maxim, "Knowledge is Power", suggests another information-seeking motive to be investigated further.

Unfortunately, our sophistication in the explication and testing of information-seeking motives is limited by the present state of motivation theory itself. Until consensus is reached on the basic (i.e., autonomous, irreducible) motives underlying all human behavior, we are not likely to secure agreement on the basic motives underlying information-seeking.

The Second Experiment

In the first experiment ego-involvement as a motive was operationalized as fear-of-failure. The apparent effect of this variable was to increase information-seeking in the condition of low intrinsic utility (i.e., when no subsequent use was to be made of the information) and to decrease information-seeking in the condition of high intrinsic utility. A *post hoc* interpretation of these results suggests that the publicity associated with the high intrinsic utility condition (i.e., writing a report based on the collected information) may have joined with fear-of-failure to inhibit information-seeking.

In the second experiment a broader range of ego-involvement induction was attempted. Subjects again were Stanford students, chiefly at the graduate level. Two fictitious comparison groups, reported to have done well or to have done poorly on the problems, were represented to them as "Stanford graduate students" and "a few professionals in the field" (the task was again disguised as an "opinion polling exercise"; therefore "professionals" were implicitly public opinion researchers).

It was thought that knowledge that both of these groups had done well on a given problem would induce fear-of-failure, while knowledge that both had done poorly would induce desire-for-success. An intermediate condition was included in which the professionals were said to have done well but the graduate students were said to have done poorly.

Again intrinsic utility was induced by means of a report-writing task involving information collected on half of the problems.

APPENDIX V/17

Twenty-five subjects each completed a warm-up problem and the six problems of the design, one for each combination of ego-involvement and intrinsic utility. The dependent variable was units of information sought (i.e., number of responses sampled from a scrambled "response listing"), converted for analysis to percentage of deviation per problem from each subject's six-problem mean. The overall condition means are:

	No Report	Report	Total
Desire for Success	99.3	98.5	98.9
Mixed	100.8	97.6 ;	99.2
Fear of Failure	104.5	99.3	101.9
Total	101.5	98.5	

These findings partly agree with and partly contradict the findings of the first experiment. The fear-of-failure conditions again elicit more information-seeking overall than conditions in which fear-of-failure has not been induced, but the intrinsic utility finding did not replicate. In fact, in every case the low intrinsic utility condition shows more information-seeking than its counterpart high intrinsic utility condition. Apparent inhibition of information-seeking is only hinted at in the fear-of-failure/high intrinsic utility condition; the difference between that cell and its counterpart low intrinsic utility cell is much greater than either of the other differences.

An analysis of variance shows no significant differences attributable either to main effects or to interaction. Therefore the terms "agree with" and "contradict" have reference only to mean trends, not to significant corroboration or denial of earlier findings.

The simplest interpretation of these results is that both inductions, for reasons partly known and partly unknown, failed to influence information-seeking behavior in any systematic way. Some observations concerning the conduct of this experiment may help to explain the failure of the inductions and thereby guide the design of similar information-seeking experiments in the future:

(1) The desire-for-success condition did not have the expected effect of stimulating information-seeking. In retrospect it seems possible that subjects were a bit "put off" by a problem on which both graduate students and professionals were said to have done poorly. These purported failures may have prompted a "what's the use" attitude toward the problem.

(2) Some subjects clearly set themselves information "quotas". They collected almost exactly the same amount of information on each problem, as if a certain sample size were objectively correct, given the size of the population to be sampled.

(3) Subjects were probably not able to optimize the distribution of time and effort per problem in accordance with any set of priorities, simply because the task was a new and fairly difficult one and because it was necessary to go from one

problem to the next in a temporal sequence. The decision to allocate more time to one problem at the expense of another has as its prerequisite the ability to keep track of expended time. If it were possible for the subject to work on all problems simultaneously, then the differing motivational context of each problem would have a better chance of making itself felt.

The failure of the second experiment to augment the findings of the first does not imply that this line of investigation is unfruitful. Methodological ingenuity will be required to induce information-seeking motives uncontaminated by the extraneous factors that weakened this experiment, however.

APPENDIX VI

Binary Coding[1]

A common procedure for interpreting questionnaire responses that can be ordered only on a nominal scale is to code them with reference to a subject-category code. In such a code each category represents one and only one meaningful class of responses, and all categories taken together are mutually exclusive and exhaustive of all possible responses to the item. The coder's task is to decide to which of the categories of the code each response should be assigned.

Binary coding is an alternative procedure for categorizing nominal-scale data. Rather than confront the coder with a large array of categories, into one of which he must assign each response, a binary code is based on a sequence of yes - no ("is the response this or not-this") decisions by which the possible categories for each response are eventually exhausted. While the end result (the assignment of all item responses to their appropriate categories) of a binary code procedure is similar and sometimes identical to that of a subject-category code, the procedure by which the end result is reached is quite different.

A binary coding system offers three advantages over a subject-category code, all of which may pertain to a given coding situation. They are:

1. The yes-no decision sequence may provide an easier (and more reliable) task for coders, particularly in cases of poorly differentiated responses.

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[1] This appendix was prepared by G. Ray Funkhouser

2. Should the researcher wish to collapse his codes (logically combine them into fewer categories), a binary system may provide an automatic collapse from lower-order classifications to the higher-order decisions which led to them.
3. If the researcher wanted to resolve ambiguities by giving one classification priority over another which might confound it he can impose this judgment hierarchy on coders by incorporating it into the binary decision tree.

In the coding phase of this project it was found that subject-category codes which yielded low coding reliabilities could often be improved by reconstructing them as binary decision trees. It was also found that recasting codes in binary form could lead researchers into more rigorous interpretation of the data, in that in doing so the code builders frequently structured decision points in terms of higher-order concepts which had not been apparent in the original subject-category codes.

For example, two of the items in the survey, "In what ways do you think your life today is different from what it was five years ago?" and "What changes do you expect in the next five years of your life?" were originally coded with the following subject-category code:

code	definition
x	no response
0	don't know
9	miscellaneous
8	no change anticipated (or, no change occurred)
codes 1, 2 and 3 if the response suggests an upward cycle	
1	improvements in things (job, education, etc.)
2	personal improvements (fulfillment, responsibilities, etc.)
3	general social improvements (society, politics, standard of living, etc.)
4	neutral changes--no indication as to whether they should be viewed positively or negatively

codes 5, 6 and 7 if the response suggests a downward cycle

5 negative changes in things (as in 1, above)
6 negative personal changes (as in 2, above)
7 negative general social changes (as in 3, above)

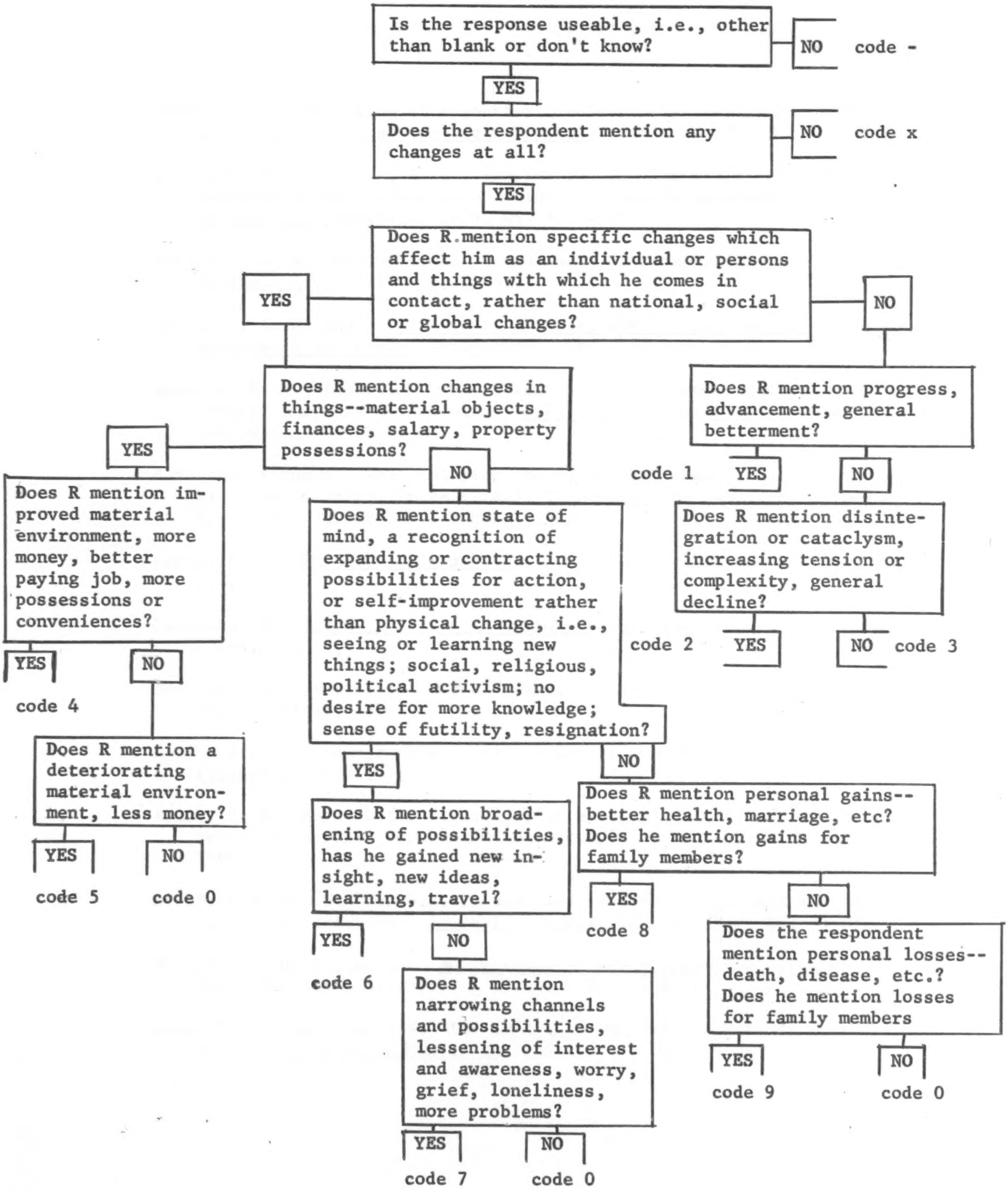
The difficulties encountered in coding the data for these two items, along with the difficulties encountered in interpreting it once coded, led to a redefinition of the code in binary form, as shown in Figure 1.

Recasting this code into a binary system accomplished two things: first, it improved coding reliability for the two items from pi = .624 (F1) and pi = .728 (F2) to acceptable (pi > .85) levels; and second, it provided data collapses which had not been explicit in the original subject-category code. The original code provided a collapse to upward and downward cycles, but in addition to this dichotomy it was possible to collapse the binary-coded data to personal vs. supra-personal, and materialistic vs. non-materialistic, changes. While these collapses may have been implicit in the original system, it was certainly not designed to facilitate them.

It would of course be overstating the case to maintain that binary coding procedures are in all ways superior to all other coding procedures. But in many situations they are, and it is difficult to imagine a situation in which they would yield inferior results. Even if there were no higher-order concepts implicit in the data which could be used as choice-points at the branchings of the decision tree, just putting a subject-category code in binary form would at least give coders an orderly procedure by which to structure their coding decisions.

APPENDIX VI/4

Figure 1


Is the response useable, i.e., other than blank or don't know?
NO
code -
YES
Does the respondent mention any changes at all?
NO
code x
YES
Does R mention specific changes which affect him as an individual or persons and things with which he comes in contact, rather than national, social or global changes?
YES
NO
Does R mention changes in things--material objects, finances, salary, property possessions?
Does R mention progress, advancement, general betterment?
YES
NO
code 1
YES
NO
Does R mention improved material environment, more money, better paying job, more possessions or conveniences?
Does R mention state of mind, a recognition of expanding or contracting possibilities for action, or self-improvement rather than physical change, i.e., seeing or learning new things; social, religious, political activism; no desire for more knowledge; sense of futility, resignation?
Does R mention disintegration or cataclysm, increasing tension or complexity, general decline?
code 2
YES
NO
code 3
YES
NO
code 4
Does R mention a deteriorating material environment, less money?
YES
NO
code 5
code 0
YES
NO
Does R mention broadening of possibilities, has he gained new insight, new ideas, learning, travel?
Does R mention personal gains--better health, marriage, etc? Does he mention gains for family members?
YES
NO
code 6
YES
code 8
NO
Does R mention narrowing channels and possibilities, lessening of interest and awareness, worry, grief, loneliness, more problems?
Does the respondent mention personal losses--death, disease, etc.? Does he mention losses for family members
YES
NO
code 7
code 0
YES
NO
code 9
code 0

APPENDIX VII

Bibliography

Adams, J. S. Reduction of cognitive dissonance by seeking consonant information. J. abnorm. soc. Psychol., 1961, 62, 74-78.

Atkinson, J. W., Heyns, R. W., and Veroff, J. The effect of experimental arounsal of the affiliation motive on thematic apperception. J. abnorm. soc. Psychol., 1954, 49, 405-410.

Atkinson, J. W. Motivational determinants of risk-taking behavior. Psychol. Rev., 1957, 64, 359-372.

Atkinson, J. W. (Ed.) Motives in fantasy, action, and society: a method of assessment and study. Princeton: Van Nostrand, 1958.

Bennett, E. M., Alpert, R., and Goldstein, A.C. Communication through limited response questioning. Public Opinion Quarterly, 1954, 18, 303-308.

Berelson, Bernard. What "missing the newspaper" means. In Lazarsfeld, Paul, and Stanton, Frank (eds.), Communications Research, 1948-1949. New York: Harper and Brothers, 1949.

Berelson, B. The library's public. New York: Columbia University Press, 1949.

Berelson, B. Content analysis in communication research. Glencoe: The Free Press, 1952.

Berelson, B., Lazarsfeld, P., & McPhee, W. Voting. Chicago: University of Chicago Press, 1954.

Booth, Alan. A demographic consideration of non-participation. Adult Education, 1961, 11, 223-229.

Brash, F. B. Motives for attendance at evening adult school by former day-school dropouts. Unpublished manuscript. Fresno State College, January, 1964.

Bronfenbrenner, U. Personality and participation: the case of the vanishing variables. Journal of Social Issues, 1960, 16, 54-63.

Brunner, E. de S., et al. An overview of adult education research. Chicago: Adult Education Association of the U.S., 1959.

Cannell, C., and Sharp, H. The impact of the 1955-56 Detroit newspaper strike. Journalism Quarterly, Winter 1958, 35, 26-35.

Chapman, C. E. Some characteristics of adult part-time students. Adult Education, Autumn 1959, 10, 27-41.

Cofer, C. N., and Appley, M. H. Motivation: theory and research. New York: Wiley, 1964.

Coleman, James S., Menzel, Herbert and Katz, Elihu. Doctors and new drugs, in press.

Danielson, Wayne. Content analysis in communication research. In Nafziger and White, (eds.), Introduction to mass communication research, Baton Rouge, Louisiana State University Press, 1963, 180-202.

de Charms, R., Morrison, H. W., Reitman, W., and McClelland, D. C. Behavioral correlates of directly and indirectly measured achievement motivation. In D. C. McClelland (Ed.), Studies in Motivation, New York: Appleton-Century-Crofts, 1955, 414-423.

De Fleur, M. L., and Larsen, O. N. The flow of information. New York: Harper, 1958.

Deutschmann, P., and Danielson, W. Diffusion of knowledge of the major news story. Journalism Quarterly, Summer 1960, 37, 345-355.

Devereux, E. C., Jr. Community participation and leadership. Journal of Social Issues, 1960, 16, 29-45.

Dollard, J., and Auld, F. Jr. Scoring human motives: a manual. New Haven: Yale University Press, 1959.

Eckland, B. K. Ability, education, and occupational mobility. American Sociological Review, 1965, 30 (5), 735-746.

Edwards, A. L. Techniques of attitude scale construction. New York: Appleton-Century-Crofts, Inc., 1957.

Edwards, Ward. Dynamic decision theory and probabilistic information processing. Human Factors, 1962, 2, 59-73.

Ennis, Philip H. Adult book reading in the United States. Chicago: National Opinion Research Center, 1965.

Eulau, Heinz and Schneider, P. Dimensions of political involvement. Public Opinion Quarterly, 1956, 20, 1, 128-142.

Farr, R. The natural history of two communication surveys: a memorandum for students of the art. Unpublished manuscript. Stanford Calif.: Institute for Communication Research, August, 1965.

Festinger, Leon. A theory of cognitive dissonance. Stanford: Stanford University Press, 1957.

French, Elizabeth G. Development of a measure of complex motivation. (Unpublished draft), Lackland AFB, Texas: Air Force Personnel and Training Research Center (Laboratory Note PRL-LN-55-6), 1955. Cited by J. D. Krumboltz, Measuring achievement motivation -- a review. J. of counsel. Psychol., 1957, 4, 191-198.

Greenberg, B. and Parker, E. B. *The Kennedy assassination and the American public*. Stanford, Calif.: Stanford University Press, 1965.

Greene, B. J. Continuing education and the high school drop out. *Adult Education*, Winter 1962, *12*, 76-83.

Herzog, Herta. Motivations and gratifications of daily serial listeners. In Lazarsfled, Paul, and Stanton, Frank (eds.). *Radio Research. 1942-1943*. New York: Duell, Sloan, and Pearce, 1944.

Holmes, T. R. Factors associated with reading of newspapers and magazines by rural families in two Louisiana parishes. Masters thesis, Louisiana State University, 1965.

Institute for Social Research, Survey Research Center. *The public impact of science in the mass media*. Ann Arbor: Author, 1958.

Irwin, F. W., and Smith, W. A. S. Value, cost, and information as determiners of decision. *J. exp. Psychol.*, 1957, *54*, 229-232.

Johnstone, J. W. C., and Rivera, R. J. *Volunteers for Learning*. Chicago: Aldine Publishing Co., 1965.

Kaplan, Abraham and Goldsen, J. M. The reliability of content analysis categories. In Lasswell and Leites (eds.), *Language of politics*. New York: George W. Steward, 1949, Pp. 83-112.

Katz, E., and Lazarsfeld, P. F. *Personal influence*. Glencoe, Ill.: Free Press, 1955.

Katz, E. The diffusion of new ideas and practices. In Schramm, W. (Ed.), *The science of human communication*. New York: Basic Books, 1963.

Knox, Alan B. Clinetele analysis. *Review of Educational Research*, 1965, *35*, 231-239.

Kraus, S. *The great debates*. New York: Doubleday, 1962.

Kuhlen, R. G. (Ed.) *Psychological backgrounds of adult education*. Chicago: The Center for the Study of Liberal Education for Adults, 1963.

Kuroda, Yasumasa. Newspaper reading and political behavior in a Japanese Community. *Journal of Communication*, 1965, *XV*, 3, 171-181.

Lansing, J. B., and Heyns, R. W. Need affiliation and frequency of four types of communication. *J. abnorm. soc. Psychol.*, 1959, *58*, 365-372.

Lanzetta, J. T., and Kanareff, Vera. Information cost, amount of payoff, and level of aspiration as determinants of information-seeking in decision making. *Behavioral Science*, 1962, *7*, 459-473.

Lasswell, Harold. The structure and function of communication in society. In Bryson, Lyman (ed.). The communication of ideas. New York: Institute for Religious and Social Studies, 1948.

Lazarsfeld, Paul, and Kendall, Patricia. Radio listening in America. New York: Prentice Hall, 1948.

Lazarsfeld, Paul, and Merton, Robert. Mass communication, popular taste, and organized social action. In Bryson, Lyman (ed.). The communication of ideas. New York: Institute for Religious and Social Studies, 1948.

Lewin, Kurt. A dynamic theory of personality. New York: McGraw, 1935.

Link, Henry C., and Hopf, Harry A. People and books. New York: Book Industry Committee, Book Manufacturers' Institute, 1946.

Litchfield, Ann. The nature and pattern of participation in adult education activities. Unpublished manuscript. University of Chicago, Department of Education, September, 1965.

Leovinger, L. The future of television. Journal of Broadcasting, 1965, 4, 41-52.

London, J., et al. Adult education and social class. Berkeley, Calif.: Survey Research Center, University of California, 1963. (multilith)

London, J., and Wenkert, R. Obstacles to blue-collar participation in adult education. In A. B. Shostak and W. Gomberg (Eds.), Blue-collar world; studies of the American worker. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1964. Pp. 445-457.

MacLean, Malcolm S. Jr. Mass media audiences: city, small city, village, and farm. Journalism Quarterly, 1952, 29, 271-82.

McClelland, D. C., Atkinson, J. W., Clark, R. A., and Lowell, E. L. The achievement motive. New York: Appleton-Century-Crofts, 1953.

McLeod, J., Ward, S., and Tancill, K. Alienation and uses of the mass media. Public Opinion Quarterly, Winter 1965, 29, 583-594.

Menzel, H. The flow of information among scientists: problems, opportunities, and research questions. New York: Columbia University Bureau of Applied Social Research, 1958.

Menzel, H. Review of studies in the flow of information among scientists. New York: Columbia University Bureau of Applied Research, 1960.

Merton, R. K. Social structure and social theory. Glencoe, Illinois: Free Press, 1957.

Mills, J., Aronson, E., and Robinson, H. Selectivity in explosure to information. J. abnorm. soc. Psychol., 1959, 59, 250-253.

Mizruchi, E. H., and Vanaria, L. M. Who participates in adult education. Adult Education, Spring 1960, 10, 141-143.

Mowrer, C. H. Learning theory and personality dynamics. New York: Ronald Press, 1950.

Murray, H. A., and Workers at the Harvard Psychological Clinic. Explorations in personality. New York: Oxford University Press, 1938.

Paisley, William. The flow of (behavioral) science information: a review of the research literature. Stanford University, Institute for Communication Research, 1965.

Paisley, William J. and Parker, Edwin B. A computer-generated sampling table for selecting respondents within households, Public Opinion Quarterly, 1965, 29, 431-436.

Parker, E. B. The effects of television on public library circulation. Public Opinion Quarterly, 1963, 27, 578-589.

Phifer, B. M. Change of interest between young adulthood and early middle age among participants in adult education programs. Unpublished manuscript. University of Chicago, 1964.

Rosenfeld, H. M., and Franklin, S. S. Arousal of need for affiliation in women. J. pers. soc. Psychol., 1966, 3, 245-248.

Samuelson, M. E. Some news-seeking behavior in a newspaper strike. Unpublished doctoral dissertation, Stanford University, 1960.

Samuelson, M. E., Carter, R. F., and Ruggels, L. Education, available time and use of mass media. Journalism Quarterly, 1963, 40, 491-496.

Schramm, W., and White, D. M. Age, education, economic status: factors in newspaper reading. Journalism Quarterly, 1949, 26, 149-159.

Schramm, Wilbur. The nature of news. Journalism Quarterly, 1949, 26, 259-269.

Schramm, W., and Carter, R. F. Effects of a political telethon. Public Opinion Quarterly, 1959, 23, 121-126.

Schramm, W., Lyle, J., and Pool, I. de S. The people look at educational television. Stanford, Calif.: Stanford University Press, 1963.

Schramm, W., Lyle, J., and Parker, E. B. Television in the lives of our children. Stanford, Calif.: Stanford University Press, 1963.

Schramm, W. The mass media in the human life cycle. Unpublished manuscript. Stanford, Calif.: Institute for Communication Research, 1965.

Schutz, W. C. On categorizing qualitative data in content analysis. Public Opinion Quarterly, 1958-1959, 22, 503-515.

Scodel, Alvin, Ratoosh, Philburn, and Minas, J. S. Some personality correlates of decision making under conditions of risk. Behavioral Science, 1959, 4, 19-27.

Scott, William A. Reliability of content analysis. Public Opinion Quarterly, 1955, 19, 321-325.

Shipley, T. E., Jr., and Veroff, J. A. A projective measure of need for affiliation. J. exp. Psychol., 1952, 43, 349-356.

Skinner, B. F. The behavior of organisms. New York: Appleton, 1938.

Staats, A. W., and Staats, C. K. Complex human behavior. New York: Holt, Rinehart, and Winston, 1964.

Steiner, G. The people look at television. New York: Knopf, 1963.

Stephenson, William. The ludenic theory of newsreading. Journalism Quarterly, 1964, 62, 125-130.

Straus, M. A. Deferred gratification, social class and the achievement syndrome. Amer. Sociol. Review, 1962, 27, 326-335.

Survey Research Center. The public impact of science in the mass media. Ann Arbor: University of Michigan, Survey Research Center, 1958.

Troldahl, V. C., and Van Dam, R. Face-to-face communication about major topics in the news. Reported in Troldahl, V. C., Studies of consumption of mass media content, Journalism Quarterly, Autumn 1965, 42, 596-603.

Troldahl, V. C., Van Dam, R., and Robeck, G. B. Public affairs information-seeking from expert institutionalized sources. Journalism Quarterly, 1965, 42, 403-412.

Veroff, J., Atkinson, J. W., Feld, Sheila C., and Gurin, G. The use of thematic apperception to assess motivation in a nationwide interview study. Psychological Monographs, 1960, 74 (12), 1-32.

Wenrich, R. C., and Crowley, R. J. Vocational education as perceived by different segments of the population. Ann Arbor: The University of Michigan, 1964.

Westley, B., and Barrow, L. C., Jr. An investigation of news-seeking behavior. Journalism Quarterly, 1959, 36, 431-438.

Westley, B., and Severin, W. J. Some correlates of media credibility. Journalism Quarterly, 1964a, 41, 325-335.

Westley, B., and Severin, W. J. A profile of daily newspaper non-reader. Journalism Quarterly, 1964b, 41, 45-50.

Wheeler, Ladd S. Information seeking as a power strategy. *J. soc. Psychol.*, 1964, *62*, 125-130.

Woodward, Julian L. and Franzen, Raymond. A study of coding reliability. *Public Opinion Quarterly*, 1948, *12*, 253-277.

Wright, Charles. Functional analysis and mass communication. *Public Opinion Quarterly*, 1960, *24*, 605-620.